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Vol. 1

PAPUAN LANGUAGES AND THE NEW GUINEA LINGUISTIC SCENE

S.A. Wurm, ed.

Department of Linguistics

Research School of Pacific Studies

THE AUSTRALIAN NATIONAL UNIVERSITY

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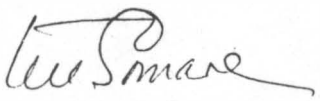
DEDICATION

Papua New Guinea has emerged as a nation with the realisation that more languages are spoken within its borders than in any other nation in the world.

We Papua New Guineans have always been aware of the enormous multiplicity and diversity of languages in our country, and in the three volumes that make up this work we see the first comprehensive and scientific study of this special feature of our culture. I, the Prime Minister, welcome this work by so many authors long associated with language study in Papua New Guinea.



M. Somare
Port Moresby
25th November, 1975

SPECIAL DEDICATION TO THE FIRST VOLUME

I remember that a few years ago I read in the newspaper that an old woman - the last speaker of a particular language group of Papua New Guinea - had died.

I felt sad. A whole language had died with that woman. A part of Papua New Guinea had died with her.

Language in itself does not seem to me to be important. But because language is communication between people, its every facet and intonation carries irreplaceable importance in society.

Because language is constantly changing, and is constantly modified by the new forces around us, it is important to record its various forms, because its construction and words give us an insight to the men and women who have used it in the past.

There has been much talk in Papua New Guinea about 'The Melanesian Way' - a phrase coined to describe a cultural way of life, that it is impossible to define in the restrictive English language, from another culture.

Those who have sought to define this 'Melanesian Way' have made the absolute, basic mistake of trying to translate it using the terms and concepts of modern learning. There has been no need to define the 'Melanesian Way' in the past, nor is there any need now. It simply is.

It is the same with language. We can translate the individual words of each language, and perhaps make ourselves understood by stringing these words together into sentences. But understanding language is not simply a matter of translation, just as the playing of music is not simply a matter of precise imitation.

If the woman who died a few years ago had taught, before her death, the vocabulary and grammatical construction of her language to a scholar, the real language would still have died with her. The scholar would have been left with the linguistic equivalent of a photograph of her language.

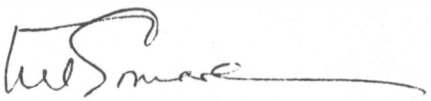
However, all this is not to detract from the importance of the three volumes of language and language use, in and around Papua New Guinea, of which this is the first.

These 'images' of communication in this part of the world will provide both our own people and others with an insight into the culture of Papua New Guinea, the basis upon which the citizens of our country will build the future.

Gain kosi, kimbeka babako arem tokdan toga

(Dialect of Mr Somare's people in Murik Lakes, Sepik)

Tie your canoe well, so that the tide does not take it away.



M. Somare
Port Moresby
December, 1975

PREFACE

The manuscripts now appearing in print as the contents of the three large volumes which constitute the present reference work on New Guinea linguistics from a general point of view and bear the overall title *New Guinea Area Languages and Language Study* were originally solicited by Professor Thomas A. Sebeok and S.A. Wurm on the initiative of the former in his capacity as General Editor of the series *Current Trends in the Language Sciences* published by Mouton Publishers, The Hague, Netherlands. Professor Sebeok was the first to conceive the idea of the publication of a set of volumes in that series under the editorship of S.A. Wurm with the overall title *Current Trends in the Study of New Guinea Area Languages*.

After the manuscripts had been delivered to Professor Sebeok by mid-1974, and through him to Mouton Publishers, and accepted by the latter, Professor Sebeok resigned from the editorship of the series *Current Trends in the Language Sciences*. In negotiations between S.A. Wurm and Mouton Publishers over the fate of the series in general and the New Guinea area volumes in particular, it became clear that the very large overall size of the envisaged New Guinea area volumes was expected to cause serious difficulties for the prospective publisher under prevailing circumstances, and their publication was likely to suffer quite substantial delays.

This would have resulted in the withholding of much unique information from the interested public for a long time, not to mention the frustrations of the numerous authors who would have not seen the results of their work appear in print within a reasonable time as parts of a large reference work. At the same time, the highly topical and changing nature of much of the subject matter treated in the volumes would possibly have made some of their contents obsolete by the time of the eventual publication, which would have been most unfortunate.

In view of this situation, other potential avenues for a speedy publication of the manuscripts in the form of a set of three to four large

volumes were explored and it proved possible to arrange for their reasonably quick publication, in three large volumes, in the book series (Series C) of the serial publication *Pacific Linguistics* issued through the Department of Linguistics in the School of Pacific Studies of the Australian National University in Canberra.

This seemed all the more appropriate in view of the fact that most of the contents of volume I, *Papuan Languages and the New Guinea Linguistic Scene* in particular, and some of those of volumes II and III, constituted the results of up to one and a half decades of intensive research work by linguists associated in one form or another with the Department of Linguistics of the School of Pacific Studies of the Australian National University, with these volumes presenting the overall results of their research for the first time in a comprehensive form in the framework of a detailed compendium.

In addition, the choice of these publication channels had the advantage that quite a number of language and related maps could be added to those originally envisaged for the volumes, thus considerably enhancing their overall value.

The technical tasks of copy-editing and indexing were carried out in the Department of Linguistics. The editor would like to express his heartful thanks to his colleagues and staff for the help given him by them in his efforts to see the volumes through the press, and in particular, his thanks are due, for volume I, to his varitypists Jeanette Coombes, Pam Griffith, Elaine Sommer and Judy Wise who carried out the lengthy and exacting task of setting up the over one thousand printing pages with their usual skill and devotion under the able supervision of Sue Tys, Linguistic Assistant in the Department who at the same time did the lion's share of the setting up herself.

Also, the editor would like to give his thanks to his staff who have so ably carried out the lengthy and arduous task of preparing the voluminous indexes for volume I under the direction and guidance of Basil Wilson, Senior Research Assistant in the Department who devised the system underlying the indexes and carried out the most difficult part of the work himself.

Again, his thanks go to the Linguistics Officer of the Department, Hilda Leach, for her dealing very ably and resourcefully with the many technical aspects and problems of guiding the three large volumes through the pre-printing, printing and finishing stages and for efficiently supervising their further handling which, on the distribution side, has been most efficiently handled by Miriam Curnow in her capacity of Publications Distribution Officer.

He also expresses his thanks to the Department of Human Geography for its wonderful cooperation in making its cartographic facilities

available. Most especially he wants to thank the excellent cartographers themselves who, especially Keith Mitchell, but also Ian Heyward and Leo Pancino, spent many hours in producing the numerous highly detailed maps in the volume, with Hans Gunther, the cartographer-in-charge, supervising the work and allotting the various tasks in a most efficient manner.

Very importantly, the editor's thanks go out to our numerous friends in Papua New Guinea, Irian Jaya, the Solomon Islands and the New Guinea area as a whole who have been our helpers and teachers in our long painstaking work in their languages and who also made our work possible in their countries in many other ways, notably as members of local administrations and governments.

The editor also wishes to voice his thanks to the Australian National University for the cooperation and facilities given and made available to him and his Department and rendering practicable the publication of these imposing volumes for which, on the technical side, the printers in the University, as well as Patria Printers and Adriatic Bookbinders deserve high praise.

He should like to give his thanks to Sir John Crawford who was Director of the School of Pacific Studies when the New Guinea Project now resulting in the publication of these three volumes made its start, and who later as Vice-Chancellor and now as Chancellor has maintained his interest in our work. He also thanks the successive Directors of the School, Professors Oscar Spate, Antony Low and Wang Gung Wu, for their continued interest in our work and their support.

Last, but not least, his thanks go out to all the numerous contributors the the volumes, whose work in compiling the many chapters and mostly many years' research preceding the writing down of their final results has made the appearance of these three volumes possible.

S.A. Wurm

Editor's Note to the second printing:

In this second printing (December 1977), amendments have been restricted to corrections of typographical and other obvious errors, and the updating of population figures in a number of languages of the Trans-New Guinea Phylum, the East Papuan Phylum and the Sepik-Ramu Phylum. The maps accompanying chapter 2.3.3. have been made clearer. Otherwise no major changes have been made to the first printing.

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INTRODUCTION

The present three-volume work *New Guinea Area Languages and Language Study* constitutes a detailed reference work and compendium giving concise information on as large a range as possible of matters and problems concerning the languages, and their study, of the New Guinea area. In spite of the spectacular size of the volumes, many aspects of this vast field of study had to remain unmentioned or could only be briefly and cursorily referred to: a situation unfortunately quite unavoidable when dealing with a part of the world in which about one-fifth of all the languages of the world is concentrated: languages which have, with few exceptions, been receiving intensive attention by a still comparatively very small number of linguists only during the last fifteen to twenty years.

In spite of this, it is hoped that the volumes may fulfil the purpose for which they have been compiled. In the devising of the nature and style of their contents, it was kept very much in mind that the volumes might not only be referred to by linguists specializing in New Guinea area languages or by professional linguists at home in other language areas and wishing to familiarise themselves with aspects of the New Guinea linguistic scene, but also, and perhaps very much so, by non-linguists wishing to learn, for one reason or another, something about language problems in the New Guinea area. Research workers such as anthropologists, prehistorians, Pacific historians, human geographers and others come to mind, but very much also persons whose interests lie in the practical application of the results of scientific study, such as educationalists, administrators, missionaries, policy makers of various kinds and orientations, and others. For the benefit of such persons, the information provided has very largely been couched in terms which, it is hoped, may be intelligible and useful for readers without much training in linguistics and/or language study, though very elementary methods of presentation have been avoided.

The work consists of three volumes which are as follows:

Volume I: *Papuan Languages and the New Guinea Linguistic Scene.*
Volume II: *Austronesian Languages.*
Volume III: *Language, Culture, Society, and the Modern World.*

While the three volumes constitute a whole and together deal with the language questions of the New Guinea area in the light of their basic diversity and from different points of view, each volume stands on its own in being concerned with a particular set of problems largely independently from the contents of the other two volumes. In the light of this, Volume I first offers a general summary discussion of the indigenous language situation in the New Guinea area and highlights the distribution and situation of the two types of indigenous languages: Austronesian and Papuan. This is followed by a detailed discussion of the Papuan (or non-Austronesian) languages: the history of research into them, their general classification problems and their nature, the various major and minor phyla of Papuan languages (and the isolates), with detailed information on the geographical locations of their constituent groups, their internal classification and salient characteristics, and possible wider connections of Papuan languages. The volume concludes with a discussion of Papuan linguistic prehistory and assumed past language migrations in the New Guinea area.

Volume II begins with a presentation of the general picture of the Austronesian languages of the New Guinea area, and is followed by a detailed survey of the history of research in these languages by areas. A description of the general features of New Guinea area Austronesian languages comes next, as well as discussions of individual Austronesian groups in the area. The final part of the volume deals with the problem of Austronesian and Papuan "mixed" languages.

Volume III begins with treatments of some aspects of language in culture, the distribution of cultural vocabulary, kinship terminology in a linguistic setting, special languages, lexicography and language change. Then follow studies of features of non-verbal communication, and discussions of multilingualism, writing vernaculars and vernacular literacy, and language policies. Next comes a very detailed presentation of various lingue franche such as New Guinea Pidgin, Hiri Motu, English and Missionary lingue franche, and of the various problems and questions connected with them including teaching in them. This is followed by discussions of vernacular education, of intrusive languages other than English, and of problems of translation and interpretation. Language planning and engineering is touched upon afterwards, and the volume concludes with a review of the institutional framework of the study of New Guinea area languages in the world.

The contents of the three volumes are divided into seven divisions which are further subdivided into a total of thirty-two parts containing the individual chapters of which the three volumes contain one hundred and forty. If a Division contains only a single chapter (see Divisions 1. and 3. in volume I) or two closely connected chapters (see Division 6. in volume III), the establishment of "Parts" has been avoided. In several instances, chapters dealing with a specific sub-set of problems within a Part have been combined as a group of chapters under a major common heading (e.g. in volume I, chapters 2.6.1. and 2.6.2. under 2.6., 2.8.1. and 2.8.2. under 2.8.; in volume III, chapters 7.4.5.1.-13. under 7.4.5.). Boxing of such a chapter group within a chapter group has also been resorted to: in volume III, chapters 7.4.1.1.-6. constitute a chapter group under 7.4.1., but 7.4.1.4. itself is a major common heading for (sub-)chapters 7.4.1.4.1.-6.

When the word "section" is used in the text of the volumes, it refers to a portion of an individual chapter.

Numbering of Divisions, Parts, Chapters, and within the latter, of sections, sub-sections and major paragraphs has been extensively resorted to to permit easy cross-referencing. The numbers run consecutively through the three volumes. Referencing within the three individual volumes is done through the quoting of the respective Division-Part-Chapter-etc. numbers, e.g. a reference from chapter 2.5. in volume I to a section in chapter 2.7. in the same volume will appear as for instance, 2.7.2.2.6. References across volumes are accompanied by the Roman volume number placed before them in parentheses, e.g. a reference from a chapter in volume I to one in volume III takes the shape of, for instance, (III) 7.9.8.

The set-up of each of the three volumes is as follows: it begins with the preface which is almost the same for all the volumes. This is followed by a summary table of contents which contains only the titles of Divisions, Parts and Chapters, and this in turn by the Introduction which is again the same for all the volumes except for the list of the journals and the codes denoting the titles of the journals referred to in the bibliographies contained in them. After this, a very detailed table of contents is given which also shows the contents of the individual chapters in terms of the sections, sub-sections etc. within them. Maps contained in individual chapters are predominantly listed towards the end of the table of contents sections relating to those chapters, unless they are maps illustrating the contents of a very specific section or sub-section within a chapter.

The main text of the volume begins immediately after the detailed table of contents, and is followed by three comprehensive indexes, one of

the names of languages and language groups occurring in the volume, one of authors and other personal names, and one of other names such as geographical names. The volume concludes with short biographies of its contributors.

Footnotes referred to by consecutive numbers within individual chapters have mostly been placed as "Notes" at the end of the chapters containing them. Only some have been put at the bottom of pages as footnotes if this seemed advisable to the editor, e.g. if such a footnote referred to a feature in a table and was deemed essential for the understanding of a particular point of the information included in it.

Each chapter is accompanied by its own bibliography - this seemed to be preferable to having one very large comprehensive bibliography at the end of each volume, in spite of the resulting considerable repetitiveness of the individual chapter bibliographies. The titles of most of the journals mentioned in the bibliographies have been quoted in coded forms, and an alphabetical list of the relevant codes and of the journals whose titles have not been coded, has been given in the introduction to each volume with the necessary explanations. The codes employed are the ones commonly used in linguistic studies and correspond to those employed in the volumes of the *International Linguistic Bibliography*.

The list of the titles and title codes of journals referred to in volume I is as follows:

AEH	*Acta Ethnographica Academiae Scientiarum Hungaricae.* Budapest.
AmA	*American Anthropologist.* Menasha, Wisconsin.
AnL	*Anthropological Linguistics.* Bloomington, Indiana.
AnnLat	*Annali del Pontifico Museo Missionario Etnologico già Lateranensi.* Vatican City.
Anthropos	*Anthropos* (= *Revue internationale d'ethnologie et de linguistique/Internationale Zeitschrift für Völker- und Sprachenkunde*). Freiburg, Switzerland.
ArchL	*Archivum Linguisticum. A review of comparative Philology and general Linguistics.* Glasgow.

Australian Territories	*Australian Territories*. Department of External Territories. Canberra.
Baessler-Archiv	*Baessler-Archiv. Beiträge zur Völkerkunde*. Berlin.
BijdrTLV	*Bijdragen tot de Taal-, Land- en Volkenkunde*. Uitgegeven door het Koninklijk Instituut voor Taal-, Land- en Volkenkunde. The Hague.
BSOAS	*Bulletin of The School of Oriental and African Studies, University of London*. London.
BT	*The Bible Translator. Periodical for the assistance of Bible translators*. London.
CAnthr	*Current Anthropology. A World Journal of the Sciences of Man*. Chicago.
Čekoslovenská etnografie	*Čekoslovenská etnografie*. Praha. Čekoslovenská Derm.
Creation Research Society Quarterly	*Creation Research Society Quarterly*. Creation Research Society. Science Research Center, San Diego.
Ethnologica	*Ethnologica. Verein zur Förderung des Rautenstrauch-Joest-Museums. Gesellschaft für Völkerkunde*. Cologne.
Ethnologischer Anzeiger	*Ethnologischer Anzeiger*. Stuttgart.
Ethnology	*Ethnology (= International Journal of Cultural and Social Anthropology)*. Pittsburgh.
Ethnomusicology	*Ethnomusicology*. Society for Ethnomisicology. Wesleyan University Press. Middletown, Connecticut.

Ethnos	*Ethnos*. The Ethnographical Museum of Sweden. Stockholm.
Foundations of Language	*Foundations of Language. International Journal of Language and Philosophy.* Dordrecht. The Netherlands.
Globus	*Globus* (= *Petermann's Geographische Mitteilungen*). Hildburghausen, Brunswick.
Hemisphere	*Hemisphere. An Asian-Australian Magazine.* Department of Education (and Science). Canberra.
Homme	*L'Homme* (= *Revue française d'anthropologie*). Paris and The Hague.
IAE	*Internationales Archiv für Ethnographie.* Leiden.
IJAL	*International Journal of American Linguistics.* Baltimore.
Indonesië	*Indonesië* (= *Tijdschrift gewijd aan het Indonesisch cultuurgebied*). The Hague.
Irian	*Irian. Bulletin of Irian Jaya Development.* Institute of Anthropology. University of Cenderawasih. Jayapura.
IUPAL	*Indiana University Publications in Anthropology and Linguistics.* Bloomington and The Hague.
JAS	*Journal of Austronesian Studies.* Victoria, British Columbia.
The Journal of Pacific History	*The Journal of Pacific History.* Department of Pacific History, School of Pacific Studies, Australian National University. Canberra.

JPS	*Journal of the Polynesian Society.* Wellington, New Zealand.
JRAI	*Journal of the Royal Anthropological Institute of Great Britain and Ireland.* London.
JSOc	*Journal de la Société des Océanistes.* Paris.
Kivung	*Kivung. Journal of the Linguistic Society of Papua New Guinea.* Port Moresby.
Kovave	*Kovave. Journal of New Guinea Literature.* Milton. Jacaranda Press.
LCCP	*Linguistic Circle of Canberra Publications. Series A, Occasional Papers; Series B, Monographs; Series C, Books.* School of Pacific Studies, Australian National University. Canberra.
LD, AP	*Language Data, Asian-Pacific Series.* Santa Ana, California, Summer Institute of Linguistics.
LDM, AP	*Language Data Microfiche. Asian-Pacific Series.* Huntington Beach, California, Summer Institute of Linguistics.
Lg	*Language (= Journal of the Linguistic Society of America).* Baltimore.
Lingua	*Lingua (= International Review of General Linguistics/Revue internationale de linguistique générale).* Amsterdam.
Linguistic Communications	*Linguistic Communications.* Monash University, Melbourne.
Linguistics	*Linguistics. An International Review.* The Hague.

LPosn	*Lingua Posnaniensis*. Posen.
Luksave	*Luksave. Summaries of the Bulletin of the New Guinea Research Unit (Australian National University)*. Port Moresby.
Man	*Man. A Record of Anthropological Science*. London.
Mankind	*Mankind. Official Journal of the Anthropological Societies of Australia*. Sydney University Press.
MBA	*Micro-Bibliotheca Anthropos*. Anthropos Institut. Posieux (Freiburg), Switzerland.
MDS	*Mitteilungen aus den Deutschen Schutzgebieten*. Berlin.
MNZG	*Tijdschrift voor zendingswetenschap 'Mededeelingen'* (Formerly *Mededeelingen vanwege het Nederlandsch Zendelingsgenootschap*). Rotterdam.
MSOS	*Mitteilungen des Seminars für Orientalische Sprachen*. Berlin.
New Guinea	*New Guinea, and Australia, the Pacific and South-East Asia, Quarterly*. Council on New Guinea Affairs. Sydney.
New Scientist	*New Scientist*. London.
NGS	*Nieuw Guinea Studiën*. The Hague.
Notes on Translation	*Notes on Translation*. Wycliffe Bible Translators. Santa Ana. California.
Nova Guinea	*Nova Guinea. A Journal of Botany, Zoology, Anthropology, Ethnography, Geology, and Paleontology of the Papuan Region*. Leiden.

NTS	*Norsk Tidsskrift for Sprogvidenskap.* Oslo.
Oceania	*Oceania. A Journal devoted to the Study of the Native Peoples of Australia, New Guinea and the Islands of the Pacific Ocean.* Sydney.
OL	*Oceanic Linguistics.* Hawaii University Press. Honolulu.
OLM	*Oceania Linguistic Monographs.* Sydney.
Overland	*Overland. Quarterly Australian Literary Magazine.* Melbourne.
Phonetica	*Phonetica (= Internationale Zeitschrift für Phonetik/International Journal of Phonetics).* Basel and New York.
PJL	*Philippine Journal for Language Teaching.* Quezon City.
PL	*Pacific Linguistics, Series A, Occasional Papers; Series B, Monographs; Series C, Books; Series D, Special Publications.* Department of Linguistics, School of Pacific Studies, Australian National University. Canberra. (Continuation of *LCCP*).
PM	*Petermanns [Geographische] Mitteilungen.* Gotha. See *Globus*.
Practical Anthropology	*Practical Anthropology.* Tarrytown. New York.
Rivista di antropologia	*Rivista di antropologia.* Formerly *ATTI (Istituto Italiano di antropologia).* Rome.
SIL	*Studies in Linguistics.* Buffalo, New York.
SJA	*Southwest Journal of Anthropology.* Albuquerque, New Mexico.

SovEtn	*Sovietskaja Ethnografija.* Moscow-Leningrad.
Studia Instituti Anthropos	*Studia Instituti Anthropos.* Wien-Mödling. St. Gabriel Verlag.
TAG	*Tijdschrift van het Koninklijk Nederlands Aardrijkskundig Genootschap.* Leiden.
Talanya	*Talanya. Journal of the Linguistic Society of Australia.* Co-published with *Linguistics.* Leiden, Mouton; and Melbourne.
TBG	*Tijdschrift voor de Indische Taal-, Land- en Volkenkunde/Majalah untuk ilmu bahasa, ilmu bumi dan kebudayaan Indonesia.* Lembaga kebudayaan Indonesia. Jakarta. (Formerly: Bataviaasch genootschap van kunsten en wetenschappen. Batavia).
Te Reo	*Te Reo. Proceedings of the Linguistic Society of New Zealand.* Auckland.
TNG	*Tijdschrift Nieuw Guinea.* The Hague.
VBG	*Verhandelingen van het Koninklijk Bataviaasch Genootschap van Kunsten en Wetenschappen.* Batavia and The Hague.
VKI	*Verhandelingen van het Koninklijk Instituut voor Taal-, Land- en Volkenkunde.* The Hague.
VKNA	*Verhandelingen van de Koninklijke Nederlandsche Akademie van Wetenschappen, afdeling Letterkunde.* Nieuwe reeks. Amsterdam.
Word	*Word (= Journal of the Linguistic Circle of New York).* New York.
Working Papers in Linguistics	*Working Papers in Linguistics.* Department of Linguistics, University of Hawaii. Honolulu.

WPNGL	*Workpapers in Papua New Guinea Languages.* Ukarumpa, Summer Institute of Linguistics.
WZKM	*Wiener Zeitschrift für die Kunde des Morgenlandes.* Wien.
ZAOS	*Zeitschrift fur Afrikanische, Ozeanische und Ostasiatische Sprachen.* Berlin. (Formerly: *Zeitschrift für Afrikanische und Ozeanische Sprachen*).
ZES	*Zeitschrift für Eingeborenen-Sprachen.* Berlin.
ZEthn	*Zeitschrift für Ethnologie.* Berlin.
ZKS	*Zeitschrift für Kolonialsprachen.* Berlin.
ZPhon	*Zeitschrift für Phonetik, Sprachwissenschaft, und Kommunikationsforschung.* Berlin.

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1.0. LANGUAGE DISTRIBUTION IN THE NEW GUINEA AREA

S.A. Wurm

1.1. INTRODUCTION

The part of the world known as the "New Guinea Area" includes the New Guinea mainland with the islands adjacent to it, as well as the islands of Halmahera, Timor, Alor and Pantar in the west, the Admiralty Islands in the north and the New Britain Archipelago and Bougainville Island in the east. From a linguistic point of view, the Solomon Islands and the Santa Cruz Archipelago in the east, and the eastern islands of Torres Strait in the south are also marginally included in it because a few Papuan languages are located in them. Areas to the west of Alor and Pantar Islands may perhaps also belong to it linguistically: a few as yet unknown Papuan languages may well be located there (see 2.10.1.).

This area has long been known as one of the, if not the, linguistically most complex and diverse areas in the world. Intensive linguistic research work carried out during the last fifteen to twenty years, mainly under the auspices of the Australian National University in Canberra and the New Guinea Branch of the Summer Institute of Linguistics, has largely succeeded in clarifying and at the same time greatly simplifying the overall linguistic picture of the New Guinea area, but the multiplicity of its languages, the nevertheless still formidable intricacy of its linguistic situation, and the now well-known structural complexity of many of the individual languages there still stagger the imagination.

In spite of the concentrated work carried out over recent years, the total number of distinct languages in the New Guinea area can at this stage only be estimated. Several areas, especially in Irian Jaya, are still linguistically insufficiently well known for reliable information on the exact number of languages in them to be extant, and with many communalects on which some information is available, the decision as to whether they constitute distinct languages or only dialects, cannot be

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made with any high degree of certainty. Taking these uncertainties into account, it seems that the total number of distinct languages in the New Guinea area approximates (and quite likely even exceeds) one thousand or so - about one-fifth of all the languages of the world.

1.2. AUSTRONESIAN LANGUAGES

1.2.1. *DISTRIBUTION OF AUSTRONESIAN LANGUAGES IN THE NEW GUINEA AREA*

The languages of the New Guinea area belong to two quite distinct language types: Austronesian, and Papuan (also known as non-Austronesian). The Austronesian languages in the New Guinea area are very predominantly located in coastal, near-coastal and insular areas, only in the Markham, Watut and Bulolo River Valley system in the Morobe District, in the mainland portion of the Milne Bay District, some southern parts of the Central District, and in the neck portion of the Vogelkop Peninsula in Irian Jaya are Austronesian languages spoken at a considerable distance from the coast. Their total number in the New Guinea area as defined above is probably over three hundred, but most of them are spoken by small speech communities only - two notable exceptions in Papua New Guinea are for instance Tolai in northern New Britain and Motu in the Port Moresby area which have 65,000 and well over 10,000 speakers respectively - and the total number of speakers of Austronesian languages in Papua New Guinea for instance constitutes only a comparatively small fraction of the total indigenous population. In Papua New Guinea, two-thirds of the Austronesian languages are spoken in the eastern half of the mainland area of the Milne Bay District and in the insular region of that District, the Admiralty Islands and the New Britain-New Ireland area, and the northern half of the Bougainville Island area. The remaining one-third is scattered along portions of the north coast or situated in the Markham-Watut-Bulolo River valley area, and is found in portions of the south coast and its hinterland areas as far west as the border between the Central and Gulf Districts. No Austronesian languages are located on the south coast further west until the Bomberai Peninsula in western Irian Jaya is reached. In Irian Jaya and adjacent areas, a number of Austronesian languages is met with on the north coast of Irian Jaya east of the mouth of the Mamberamo, but their bulk is located in the Geelvink Bay area and on the nearby islands, in the neck-portion of Irian Jaya, on the Bomberai Peninsula, the islands to the east of the Vogelkop Peninsula, in the southern half of Halmahera, in parts of Timor, and on Alor and Pantar Islands. The great majority of the languages found in the British Solomon Islands are Austronesian, and many of them belong to the large Eastern Oceanic group whose main portion lies further east (see below, 1.2.2.).

1.2.2. *GROUPING AND ORIGIN OF AUSTRONESIAN LANGUAGES OF THE NEW GUINEA AREA*

These Austronesian languages belong to the far-flung Austronesian Group whose domain extends from Madagascar in the west across Indonesia, some parts of the South East Asian mainland and the Philippines to Taiwan in the north, and across Melanesia, Micronesia and Polynesia to Hawaii and Easter Island in the north-east and east.

The Austronesian languages are all interrelated (Dyen 1965), and several clear-cut subgroups such as the Polynesian language family have been established within them, but the precise subgroupings of the Austronesian languages of the New Guinea area is still a matter for further research. A considerable number of families have been established by linguists working independently from each other in different areas, and their results are discussed in the various sections of (II)4.4., but the Austronesian languages of the extreme eastern and western fringe parts of the New Guinea area as defined in 1.1. have not been dealt with there. However, a general comparative assessment of the Austronesian languages of the New Guinea area as a whole is likely to show that quite a number of these separate families can be combined into one, or a few, larger families, with the precise degrees of interrelationship still to be worked out. At this stage, it seems also clear, or in the case of some languages, likely, that many of the Austronesian languages of the New Guinea area belong to the very large Eastern Oceanic Group or Stock (Pawley 1969, 1972) which, outside the New Guinea area, comprises languages of the Central and Northern New Hebrides including the Banks and Torres Islands, those of Fiji (and probably Rotuma), Polynesia, and apparently most of those in Micronesia.

In the New Guinea area, it extends to the languages of the south-eastern Solomon Islands, and apparently some of western New Britain and the south coast of Papua New Guinea. It may perhaps be possible to link some of the Austronesian languages of the Morobe and Madang Districts with this group to some extent at least, but there appears to be a considerable break between the Austronesian languages to the west of Manam Island, and those to the east. The Austronesian languages in Irian Jaya and further west, especially those spoken in the Geelvink Bay area and westwards, may have to be looked upon as a different type again, perhaps with a stronger influence from languages further west (Milke 1958, 1961), though at least some of them clearly belong to the eastern, i.e. Oceanic, Austronesian languages (Grace 1971).

The Austronesian languages in the New Guinea area constitute relatively recent immigrant languages which came originally from the west, and an ancestral form of them, known as proto-Oceanic, is believed to have

established itself in the New Britain-New Ireland (and/or general north-eastern New Guinea) area about five thousand years ago with the likelihood of the speakers getting into contact with the earlier Papuan population in at least some of that area, with cultural, racial and linguistic influences resulting from this contact situation. From this area, local migrations appear to have spread Austronesian languages westwards along the northern coast of the mainland, eastwards into the northern Solomons and perhaps even much further, and southwards into parts of the nearby coast of the New Guinea mainland and the islands adjacent to it. A part of the immigrant proto-Oceanic speakers which appears to have stayed relatively free from Papuan contacts and may have moved on eastwards immediately, apparently proceeded directly as far as the Central New Hebrides from where they dispersed further eastwards, southwards, and (north-)westwards (Wurm 1976b). In this, it is of interest for the purpose of this chapter that by about 2,000 B.C., Eastern Oceanic Austronesian languages appear to have been established in the south-eastern Solomon Islands, in south-western New Britain and on parts of the south coast of New Guinea. It also seems that such languages have reached the Markham River valley in the Morobe District and penetrated into it, apparently being instrumental in an east-to-west Papuan language migration involving languages belonging to the Trans-New Guinea Phylum (see 3.4.1.) which carried some Eastern Oceanic Austronesian loanwords through the New Guinea mainland as far as the Bomberai Peninsula (see 2.5.4.2.2.).

1.3. PAPUAN (NON-AUSTRONESIAN) LANGUAGES

1.3.1. *INTRODUCTORY REMARKS*

The main problem in New Guinea linguistics is constituted by the Papuan (or non-Austronesian) languages, their distribution, classification and grouping, nature, and possible origin. They have been in the New Guinea area very much longer than the Austronesian languages, and while at least some of them may have entered the area as immigrant languages in the not-too-distant past, though generally well antedating the arrival of the Austronesian languages, some of them can be assumed to have been in the New Guinea area for tens of thousands of years (see 3.4.1.).

The Papuan languages constitute something of an enigma: hemmed in by the vast realm of the Austronesian languages in the west, north and east, and the continent-wide territory of the Australian languages in the south, lies their world in the New Guinea area. Well over seven hundred distinct languages, with innumerable dialects, are located in the region stretching from - and perhaps even from the west of - the islands of Pantar, Alor, Timor and Halmahera in the west across the New Guinea mainland to the

islands of New Britain, New Ireland and Bougainville in the east, with a few scattered Papuan languages appearing further east in the Solomon Islands chain as far east as the Reef and Santa Cruz Islands. Between one-sixth and one-seventh of all the languages of the world are thus concentrated on a tiny fraction of the surface of the earth - the greatest concentration of languages met with anywhere in the world, with these languages showing only some very doubtful connections, if any, with a very few outside languages (see part 2.16.).

Approximately 2,756,000[1] people speak Papuan languages, which gives an average figure of only about 3,700 speakers per language if the total number of Papuan languages, including twenty to thirty or so as yet unidentified languages (see the end of 1.3.4.), is estimated to be about 750. In reality, hundreds of languages have very much fewer speakers than this, quite a few of them only a few dozen to a couple of hundred, because a large portion of the total number of Papuan speakers is claimed by a comparatively small number of numerically strong languages. So, for instance, the languages of the East New Guinea Highlands Stock in the Trans-New Guinea Phylum account for just over 5% of all Papuan languages identified to date, but the number of their speakers constitutes 33.7% of the speakers of Papuan languages! At the same time, the numerically largest Papuan language, Enga in the Western Highlands District of Papua New Guinea, has only about 150,000 speakers, which is only just over 5.4% of the total number of all speakers of Papuan languages.

To add to the complexity of the picture, the Papuan languages had, until just over two decades ago, been generally believed to be mostly unrelated to each other, and to constitute a great conglomerate of hundreds of highly diverse, very complex, numerically small languages which showed no apparent genetic links with each other or any outside language. Only very few Papuan languages could be included in mostly small groups of interrelated languages, with these groups showing no obvious connection with each other. The term 'Papuan languages' or 'non-Austronesian languages' was therefore only used as a negative classificatory term to describe languages thus named as distinct from Austronesian (and Australian) languages, without implying the existence of any genetic link between them.

Already during that early period, it had however been noticed that many Papuan languages displayed some typological and structural resemblances which were greater than those sometimes observed when making typological comparisons of unrelated languages in other parts of the world (Wurm 1954).

The only groups of interrelated Papuan languages of some size which were known or believed to exist towards the late forties - without the

total, now known, extent of these groups having been fully recognized at that time - were the Kiwai Family in the Fly Delta area and in coastal regions to the north of it, the Toaripi Family in coastal and near-coastal areas of the Gulf District, a group of unknown size and extent in the Huon Peninsula area, portions of what is now known to be the Binanderean Family in the Northern and the Koiarian Family in the Central District, the Marind-Kuni Family in south-eastern Dutch New Guinea, and a group in the northern half of Halmahera to the north-west of the New Guinea mainland. There were also suggestions regarding the possible existence of large groups in the highlands of both Australian and Dutch New Guinea, in the Middle Sepik area, and in southern parts of Dutch New Guinea, though the spectacular real extent of these groups which was to be established by subsequent work was not even suspected at that stage.

1.3.2. *DEVELOPMENTS IN PAPUAN LINGUISTIC CLASSIFICATION FROM THE LATE FIFTIES TO THE MID-SIXTIES*

A very large amount of research work has been carried out in the Papuan linguistic field since the late fifties, mainly under the auspices of the Australian National University and the New Guinea Branch of the Summer Institute of Linguistics - from the early fifties also by Dutch linguists working in former Dutch New Guinea until the Indonesian takeover in 1962 - and this work has been steadily intensifying and gaining in momentum and volume, especially so after the mid-sixties.

The immediate result of this work, especially in its earlier years, was the discovery and establishment of a considerable number of mostly quite large groups of interrelated Papuan languages. At the same time, it was found that there was a not inconsiderable number of Papuan languages, mostly members of the newly established large groups, which were spoken by quite sizeable speech communities numbering close to, and over, 100,000 speakers in a few instances.

These discoveries resulted in quite a profound change of the earlier Papuan linguistic picture, though they still appeared to indicate that the Papuan languages belonged to a considerable number of disparate, seemingly unrelated groups. By the mid-sixties the following groups were known or believed to exist:

The East New Guinea Highlands Phylum, then believed to consist of one stock comprising four families and one family-level language isolate, one more distantly related family and three language isolates, though this picture changed and expanded as a result of subsequent work (Wurm 1971). It was thought to be almost entirely located within the three Highlands and the Chimbu Districts of Papua New Guinea, but it is now known that languages and families subsumed under it in the now superseded

classification discussed below in 1.3.3. extend into adjacent districts, especially into the Gulf District.

The Ndu Family located in the Middle Sepik area between the Sepik and the north coast. Again, subsequent research showed this group to be of greater extent than at first believed.

The Ok Family in the geographical centre of New Guinea, extending from the uppermost course of the Sepik River to the south almost to Lake Murray, and straddling the central Irian Jaya-Papua New Guinea border region.

The Awyu-Dumut Family in south-eastern Irian Jaya.

The Central South Coast or Kamoro-Sempan-Asmat Family located in the southern central coast and inland areas of Irian Jaya, between Etna Bay in the west and the mouth of the Eilanden River in the east.

The Yaqay-Marind-Boazi, Yelmek-Maklew and Frederik Hendrik Island language groups in south-eastern Irian Jaya. All three were recognized as language families soon after the mid-sixties (Voorhoeve 1968).

The Dani Family in the Baliem Valley area of the highlands of Irian Jaya.

The Ekagi-Woda-Moni Family situated in and to the east of the Wissel Lakes region in the western part of the highlands of Irian Jaya.

A stock of languages on Timor and adjacent small islands, and on Alor.

The West Papuan Phylum comprising the languages spoken in the northern half of Halmahera to the north-west of western Irian Jaya, and most of the languages of the Vogelkop Peninsula.

The Bomberai Peninsula Phylum situated in the Bomberai Peninsula in south-western Irian Jaya and overlapping into the Vogelkop Peninsula.

Just after the mid-sixties, the impression was gained that the groups mentioned in the last three paragraphs could be combined into a single phylum, and the name West Papuan Phylum was extended to cover them all (Wurm 1971; also Cowan 1965 and Anceaux 1958).

The North Papuan Phylum including the languages on the Upper Tor and the Tami Rivers in north-eastern Irian Jaya, and comprising some of the languages located between the two rivers.

The Sentani-Demta-Nimboran Phylum situated between the Upper Tor River and the Tami River sections of the North Papuan Phylum, and extending to the west and south.

Cowan (1957a,b) proposed the combination of the two last-named phyla into one under the name North Papuan Phylum. This suggestion was accepted by the present writer in Wurm 1971, but soon after the completion of its manuscript in mid-1968, research by C.L. Voorhoeve appeared to show (Wurm 1971, December 1969 supplement) that most of the languages composing Cowan's North Papuan Phylum constituted members of the Central and South

New Guinea Phylum established by the former (Voorhoeve 1968), except that the members of the Sko Family which Cowan had included in the North Papuan Phylum (Cowan 1957b) seemed more appropriately excluded from it and perhaps classified with the Torricelli Phylum in the Western Sepik District of Australian New Guinea, as had already been suspected by D.C. Laycock and the present writer (Wurm 1971). Soon afterwards it was demonstrated that the Sentani Group could definitely be regarded as a member of the Central and South New Guinea Phylum, with the Nimboran Family in all probability also belonging to it (Voorhoeve 1969, McElhanon and Voorhoeve 1970), along with the remaining languages of the originally postulated Sentani-Demta-Nimboran Phylum. At the same time, evidence was mounting in favour of the assumption that the members of the Sko Family were in fact unrelated to those of the Torricelli Phylum and, together with some other families and isolates of the central northern coastal and hinterland regions of the Papua New Guinea-Irian Jaya border area, constituted a stock not related to any other language of the New Guinea area (Laycock 1973). Of the other original members of Cowan's extended North Papuan Phylum, the languages located in the Upper Tor and the Tami River areas were demonstrated by Voorhoeve (1971) to show clear connections with the, by then, established Trans-New Guinea Phylum into which the original Central and South New Guinea Phylum had been included (McElhanon and Voorhoeve 1970). This clearly bore out Voorhoeve's abovementioned earlier suggestion (Wurm 1971, December 1969 supplement). By way of anticipation, and to prevent possible confusion on the part of the reader, it may be mentioned that in 1972, Wurm assessed the evidence available on these languages and other languages of the extreme western and north-western part of Papua New Guinea (in part kindly put at his disposal by D.C. Laycock from the latter's fieldnotes), and while agreeing with Voorhoeve's and Laycock's findings as discussed above, as far as they go, he found that the languages of the Upper Tor and the Tami River areas could actually be included in the Trans-New Guinea Phylum along with some other groups of the area, amongst them some about whose inclusion Voorhoeve had originally expressed doubts (Voorhoeve 1971). Work carried out since by Voorhoeve (1975) has demonstrated the accuracy of Wurm's assumption, and has also shown that there are stock-level relationship links between the Upper Tor area languages and languages located further south in the Lake Plain area.

The existence of the following five additional groups was only tentatively assumed in the mid-sixties:

A group, of unknown extent, of interrelated languages in the Huon Peninsula area.

A group composed of several, or perhaps all, of the languages spoken by Kukukuku type people in the Watut River and Menyamnya areas of the Morobe District and adjacent parts of the Eastern Highlands and Gulf Districts.

The Awin-Pare Family between the Upper Fly and Upper Strickland Rivers in the Western District.

The Left May Family west of the May River, a southern tributary of the Upper Sepik River.

A group located in the Upper Sepik area.

As has been indicated above, the discovery of the existence of these quite numerous and predominantly large to very large groups, and their establishment, brought about a profound change in the Papuan linguistic picture as conceived of prior to these discoveries. At the same time, this changed situation constituted a strong qualification of the previously purely negative classificatory meaning of the term 'Papuan languages' (see 1.1.), though it seemed that Papuan languages still belonged to a quite extensive number of distinct groups which were apparently not related to each other.

1.3.3. *DEVELOPMENTS FROM THE MID-SIXTIES TO LATE 1969*

Already during the establishment of the large groups mentioned in 1.3.2., there had been indications that some distant relationship might exist between members of different groups. For instance, the suggestion was made by Wurm that there might be a distant relationship between the East New Guinea Highlands Phylum, the Huon Peninsula Group and the Dani Family (Wurm 1960), and perhaps also between the East New Guinea Highlands Phylum and the Binandere, Ok and Ndu Families (Wurm 1961, 1964). It was also mentioned as a possibility that the Ok, Awin-Pare and Awyu-Dumut Families might constitute a single large stock or phylum, and that the Kamoro-Sempan-Asmat Family might also be a member of it (Healey 1964). It was also proposed that some distant relationship might connect the Ok Family and a group of languages in the Mt Goliath area in the eastern highlands of Irian Jaya (Healey 1964). At the same time, Healey suggested that the lexical links between languages of the Ok Family and the Oksapmin Family located to the east of it, might be attributable to extensive borrowing rather than to genetic relationship. Earlier Wurm had noted that there appeared to be some probability of a relationship existing between the Ekagi-Woda-Moni and the Kamoro-Sempan-Asmat Families, with this relationship extending to a few other languages in the south-eastern part of what was then Dutch New Guinea (Wurm 1960). At the same time, Capell (1962) made similar observations concerning the possible

relationship of the Ekagi-Woda-Moni Family to the Dani Family, and of both of them to the East New Guinea Highlands Phylum.

Greenberg (1960) suggested wide interrelationships between Papuan languages, with these relationships going beyond the New Guinea area to include the Andamanese and also the Tasmanian languages.

Most of these various indications and suggestions were taken up by C. and F. Voegelin (1965) in setting up a tentative macro-phylum which covered a large part of the New Guinea mainland and comprised the East New Guinea Highlands Phylum, the south-eastern West New Guinea Phylum (composed of the Kamoro-Sempan-Asmat Family and a number of languages in south-eastern Irian Jaya), the Ok-Oksapmin Phylum, the Kâte Phylum (i.e. the Huon Peninsula Group), and the Binandere, Ndu and Dani Families (the Binandere Family is referred to by them as a Phylum).

The setting up, however tentatively, of this very large group of interrelated languages constituted a further major step away from the notion that the term 'Papuan languages' implied that South-Western Pacific languages so referred to were generally unrelated to each other. This macro-phylum included a good portion of the Papuan languages known at the time of its establishment, and its members had been assigned (if only tentatively) the status of at least distantly interrelated languages. Further intensive work by S. Wurm, D. Laycock, C. Voorhoeve, T. Dutton, K. Franklin, K. McElhanon, J. Z'graggen and members of the Summer Institute of Linguistics, New Guinea Branch, between 1965 and 1969, produced a large amount of additional evidence for the more definite establishment of this macro-phylum, and, at the same time, extended its limits far beyond the area suggested by C. and F. Voegelin to cover about three-quarters of the New Guinea mainland, and to include well over half of the over six hundred Papuan languages identified by that time. In particular, the existence of the South-East New Guinea Phylum (Dutton 1969) and its membership to the macro-phylum was recognized, the geographically very far-flung Central and South New Guinea Phylum (Voorhoeve 1968) within the macro-phylum set up, and wide interrelationships in the Sepik area postulated, with the assumption (Wurm 1971) which later proved to be in error and to be based on the misinterpretation of borrowed features, that the large group established there might perhaps also link with the macro-phylum. The existence of wider local connections between languages in the highlands areas of Irian Jaya was also discovered, and the Kukukuku Group which was recognized as a single stock or family and named the Anga Stock (or Family), was found to be clearly linked with the macro-phylum.

All this constituted a change of quite revolutionary dimensions from the earlier Papuan linguistic picture, and definitely shifted the term 'Papuan languages' from its status as a negative classificatory term

towards that of a term denoting, for the greater portion of its area of applicability, apparently genetically interrelated languages of a definite type.

This fact resulted in a terminological dilemma which has not been resolved to the present day. If the majority of the languages referred to by the previously negative classificatory term 'Papuan' had been found to be interrelated, should the term 'Papuan' be only applied to these in the light of what has been said in the above paragraph, and the other 'Papuan' languages not related to them referred to exclusively by a different name or names, or should the term 'Papuan' be kept as a general term to refer to all non-Austronesian and non-Australian languages of the South-Western Pacific, with special names used to denote the separate large groups of interrelated languages? This latter procedure appears to be the most appropriate, and has been adopted for the purpose of this work in which the term 'Papuan languages' will be comparable in usage to, for instance, 'Amerindian languages'. The various separate groups of Papuan languages are referred to by their established phylum-level names such as Trans-New Guinea, Sepik-Ramu, Torricelli, West Papuan, East Papuan Phylum; Kwomtari phylum-level Stock, etc. For the first five, which are the largest, and together account for over 95% of all Papuan languages known today, the names 'Southern Papuan languages', 'North-Eastern Papuan languages', 'Central northern Papuan languages', 'Western (or North-Western) Papuan languages' and 'Eastern Papuan languages' might perhaps be possible as popular reference terms, but their use has not been proposed in this work or elsewhere.

Late in 1969, the macro-phylum mentioned above which had been given the name Central New Guinea Macro-Phylum was believed to constitute a super-phylum consisting of several interrelated, but separate, phyla and phylum-level stocks and families which were the following:

The East New Guinea Highlands Phylum.
The Central and South New Guinea Phylum (including the Goliath Family).
The Finisterre-Huon Phylum.
The Madang Phylum.
The South-East New Guinea Phylum.
The West New Guinea Highlands Phylum.

The possibility of the presence of genetic links of members of the Central New Guinea Macro-Phylum with the following was believed to exist, with a high level of probability:

The Anga Stock.
The Adelbert Range Phylum,

and, with a low level of probability, with:

The Middle Sepik Phylum.
The Upper Sepik Phylum.
The Sepik Hill Family.

The latter three were believed to be interrelated and to possibly constitute a single phylum only. The next large group, Torricelli Phylum established by Laycock (1968) did not appear to link with any other group.

1.3.4. *DEVELOPMENTS SINCE 1970*

The first clear evidence pointing towards a possible closer connection between the East New Guinea Highlands Phylum and the Central and South New Guinea Phylum had become available in the independent classification, supported by some regular sound correspondences and other evidence favouring an assumption of genetic relationship, of the Duna language as a family-level isolate of both these phyla, by Wurm (Western Family: 1964, 1965, 1971) and Voorhoeve (in Wurm 1971, December 1969 supplement, and in McElhanon and Voorhoeve 1970), and of the Foe language as a family-level isolate in the Central and South New Guinea Phylum (Voorhoeve, oral communication; and Franklin 1968 can be interpreted in the same way: he includes Foe and Fasu into the Kutubuan Family, and Fasu had been classified as a family-level isolate in the Central and South New Guinea Phylum in Voorhoeve 1968 - Voorhoeve had at that stage not concerned himself with the classification of Foe) and at the same time, as a stock-level isolate of the East New Guinea Highlands Phylum (Wurm 1964, 1965, 1971). Also, Franklin (oral communication, later published in Franklin and Voorhoeve 1973) could demonstrate the existence of regular sound correspondences in first over sixty, then many more, cognate words in Fasu of the then Central and South New Guinea Phylum, and Kewa, a member of the West-Central Family in the then East New Guinea Highlands Phylum. Recent more detailed work carried out on the classification of these languages by Franklin and Voorhoeve (1973) has shown conclusively that Fasu and Foe, along with several newly established languages, are members of two different families which show a stock-level relationship to each other. This would allow their inclusion into a stock, and the name Kutubuan Stock has been proposed for it by Franklin and Voorhoeve (1973). At the same time, reservations as to the status of this group as a separate stock have been expressed by the same two linguists (Franklin and Voorhoeve 1973) in view of the fact that a chain-relationship exists between the two families and other families within the Central and South New Guinea Stock, and also with members of the West-Central Family of the East New Guinea Highlands Stock, especially the Kewa dialects. In view of this situation, the decision has been taken to regard the two families referred to above as

constituting the Kutubuan Stock, and to combine it with the Central and South New Guinea Stock into a super-stock seeing that the links between that stock and the Kutubuan Stock as a whole appear to be somewhat closer than those between the Kutubuan Stock and the East New Guinea Highlands Stock as a whole, though the transitional position of the Kutubuan Stock between these other two stocks is fully recognized.

As a very recent development, Franklin (see 2.14.2.) has proposed a re-classification of the Kutubuan Stock languages as members of two different stocks (see also 2.7.1.).

Earlier, Wurm (1964) had demonstrated the presence of striking typological agreements between languages of the East New Guinea Highlands Phylum, the Huon Peninsula Group and the Ok Family, with some of these agreements extending to the Binandere Family. This work was further advanced by McElhanon (1967) who drew attention to structural similarities between languages of the Ok Family and the Huon Peninsula area which were separated from each other by the large bulk of the East New Guinea Highlands Phylum. Later, Voorhoeve (1969), in looking at the question of the possible presence of genetic interrelationship between the Asmat language of the Central and South New Guinea Phylum, and the Sentani language in north-eastern Irian Jaya, found evidence indicating that the proto-language from which elements in both were derived had been located somewhere in a lowland riverine area and suggested the Sepik or Ramu River basins as possibilities. At the same time, he observed remarkable agreements between some lexical information on Madang District languages (Z'graggen 1971) and on languages of the Central and South New Guinea Phylum.

These discoveries heralded the second revolutionary change in the Papuan linguistic picture which took place during 1970 and 1971, and whose full effects and total extent began to crystallise clearly only towards the end of 1971 and during 1972 and 1973. The first decisive step in this was the setting up of a hypothesis by McElhanon and Voorhoeve according to which the member languages of at least a few of the separate phyla included in the Central New Guinea Macro-Phylum could be demonstrated to be members of a single phylum and therefore to be relatively closely related to each other. To prove this hypothesis, they undertook a comparison of lexical items of the Central and South New Guinea Phylum and the Finisterre-Huon Phylum, drawing on languages of other potential phyla only marginally, while intentionally leaving the geographically intervening East New Guinea Highlands Phylum out of consideration. In the course of this work, they could establish interphylic cognate series for fifty-three items, out of a total of eighty-five compared (McElhanon and Voorhoeve 1970), with the sound correspondences between members of given interphylic series so clear that there seemed to be little room for doubt that these series

constituted evidence of a relatively close genetic relationship between the languages concerned. In view of the discontinuous nature of the basis chosen for their work, the authors attempted the reconstruction of proto-forms only in a few instances.

The authors regarded their results as impressive enough to propose modifying the notion of the Central New Guinea Macro-Phylum as a super-group consisting of a number of separate, distantly interrelated, phyla in replacing it in part by the recognition of a single very large phylum, the **Trans-New Guinea Phylum** which they provisionally regarded as composed of the stocks constituting the former Central and South New Guinea and the Finisterre-Huon Phyla, as well as the Binandere Stock and the Sentani Group, with the stocks making up the East New Guinea Highlands and the Madang Phyla, the Rai Coast Stock, and the Nimboran Group as potential additional members. Voorhoeve (personal communication) later also suggested the inclusion of the Wisselmere-Kemandoga Stock (consisting of the Ekagi (or Kapauku)-Woda-Moni Family and Uhunduni (or Amung)) into the Trans-New Guinea Phylum.

The present writer took up McElhanon's and Voorhoeve's ideas and proceeded to systematically comparing lexical items of languages of the East New Guinea Highlands Stock, the major component of the East New Guinea Highlands Phylum, with the interphylic series established by McElhanon and Voorhoeve (1970). He found that the lexical equivalents in individual languages of the East New Guinea Highlands Stock which had been chosen for this work tied in very well with McElhanon's and Voorhoeve's interphylic cognate series in about three-quarters of the cases which was ample proof of their membership to the new Trans-New Guinea Phylum. This work was extended to member languages of the Anga Stock, with equally satisfying results, and when considering member languages of the stocks composing the Adelbert Range Phylum, evidence favouring the inclusion of these stocks into the Trans-New Guinea Phylum was also forthcoming. The same was the case with languages formerly included in Cowan's (1957a,b) extended North Papuan Phylum which had been recognized by Voorhoeve (1971) as having links with the Trans-New Guinea Phylum languages. The systematic application of this procedure to languages of all the stocks belonging to member phyla of the former Central New Guinea Macro-Phylum made it possible for the present writer to undertake the reconstruction of a number of Trans-New Guinea Phylum proto-forms (Wurm 1976a), and to propose the inclusion of all the languages of the thereby now superseded Central New Guinea Macro-Phylum into a new extended Trans-New Guinea Phylum, with the exception of those of the original Sko Family (see 1.3.2.) and some languages related to it, and of those of the Middle Sepik and the Upper Sepik

Phyla, and the Sepik Hill Family, whose similarities to Trans-New Guinea Phylum languages were then recognized as borrowed features, and which now form part of the newly established large Sepik-Ramu Phylum (see 2.11.) which does not seem to be related to the Trans-New Guinea Phylum. At the same time, work on these lines led to the inclusion (in part tentatively) of Papuan languages of the Vogelkop and Bomberai Peninsulas in Irian Jaya into the Trans-New Guinea Phylum, and showed up the presence of Trans-New Guinea Phylum lexical elements, on the basic vocabulary level, in language groups believed to be outside the Trans-New Guinea Phylum or at least not entirely includable in it, such as most member groups of the Sepik-Ramu Phylum, the Kwomtari and Sko Stocks, and the West Papuan Phylum, as well as the East Papuan Phylum.

Another, in some respects perhaps even more revolutionary, step away from the Papuan linguistic picture prevailing in late 1969 was brought about by the results of extensive fieldwork by D.C. Laycock in the two Sepik Districts in 1970-71, in the course of which virtually every one of the languages of those areas was assessed, a number of new languages discovered, and the last linguistically unknown parts of those areas surveyed. It was found that of the previously known large groups in the area, the Upper Sepik and the Middle Sepik Phyla as well as the Sepik Hill Family were relatively closely interrelated, and that there were relationship links between them and quite a few other languages and language groups of the region, though not with those of the **Torricelli Phylum** and apparently also not with the Sko Family mentioned above in 1.3.2. Members of the Trans-New Guinea Phylum located in the Papua New Guinea-Irian Jaya border areas and occupying a portion of the extreme western and northwestern part of the Western Sepik District are apparently unrelated to this large new phylic language group consisting of the various groups referred to above, though they have to some extent been influenced by members of it. Exactly the same applies to a few small groups and isolates. It also became evident that the languages of the Ramu Phylum established by Z'graggen (1971) showed relationship links with this large new phylum which therefore occupies much of the northern part of Papua New Guinea, in particular the Sepik and Ramu River basins, and has in the light of this been named the **Sepik-Ramu Phylum.**

The working out of the interrelationships between the postulated members of this Sepik-Ramu Phylum has been particularly difficult because of evidence of quite extensive borrowing on almost all levels between members, and also between members and outside languages such as those of the Torricelli and Trans-New Guinea Phyla, which resulted in great variability of the structural set-up of the Sepik-Ramu Phylum languages. Much of the formal variations of these languages can be explained in terms

of postulated migrations and contacts between Sepik-Ramu Phylum languages and outside languages (see 3.4.1.), but some aspects of our knowledge of the internal composition of the Sepik-Ramu Phylum, less so of its total extent, are still to some extent tentative and remain to be worked out in greater detail after Laycock's first presentation of his findings (Laycock 1973)(see 2.11.).

Another decisive step away from the 1969 Papuan linguistic picture resulted from work carried out by Wurm in the Papuan languages of the island world to the north-east and east of the mainland on the basis of earlier studies, his own materials and materials kindly put at his disposal by A. Capell, G. Grace, A. Chowning and B. Hackman. Only two separate groups of interrelated languages had previously been established in that area, i.e. the Bougainville Phylum on Bougainville (Allen and Hurd 1965) and the Reef Islands-Santa Cruz Family (Davenport 1962, Wurm 1969, 1970), though the possibility of the existence of relationship links between a number of the languages of the area, most of which had earlier been regarded as unrelated isolates, had been suspected (Capell 1969, Wurm 1971). Wurm's recent work in the languages of the entire area gave indications that they were all interrelated in varying degrees, and he proposed their inclusion in a newly established phylum, to be named the **East Papuan Phylum**, and made suggestions concerning its internal composition (Wurm 1972)(see 2.13.1.). Some of Wurm's findings have recently been corroborated by E. Todd on the basis of extensive fieldwork in Solomon Islands Papuan languages, and the interrelationship of languages of that particular area found to be even closer than assumed by Wurm (see 2.13.1. and 2.13.2.).

The most recent major change in the 1969 Papuan linguistic picture resulted from Voorhoeve's work in the languages and language classification of western and northern Irian Jaya (Voorhoeve 1975, see also 2.10.2.). The two most important aspects of Voorhoeve's work are the following:

He could establish that most languages of northern Irian Jaya were interrelated and that they, and also the languages of Timor, Alor and Pantar which constituted a stock and had been thought to belong to the West Papuan Phylum, could be included into the Trans-New Guinea Phylum.

Voorhoeve's findings resulted in a considerable extension of the Trans-New Guinea Phylum and at the same time, led to a great reduction in the size of the **West Papuan Phylum.** At the same time, it became apparent that there were very few 'pure' West Papuan Phylum languages except perhaps for the Northern Halmahera area and some parts of the Vogelkop Peninsula, though the West Papuan Phylum language type as such seems to be recognisable to some extent as a substratum feature over wide areas on the New Guinea mainland and shows some of the features discussed in 2.3.2.2. in

connection with languages whose personal pronouns belong predominantly to set II.

The Timor-Alor-Pantar Stock languages which constitute the most recent addition to the Trans-New Guinea Phylum, contain strong West Papuan Phylum elements, and it seems possible to argue for their relationship with either of these two phyla. Capell (see 2.10.1.) treats them as part of the West Papuan Phylum, while recognizing the tenuous nature of their relationship to other members of that phylum.

Another result of Voorhoeve's recent work has been the establishment of two small phylic groups and a few language isolates in northern Irian Jaya (see 2.14.3. and 2.15.2.).

In the light of what has been stated so far in this chapter, the present picture of Papuan language grouping in the New Guinea area is as follows:

A) MAJOR PHYLA:

1) **The Trans-New Guinea Phylum** covering most of the New Guinea mainland except for a) the greater part of the Vogelkop Peninsula, b) the north-western-most part of the non-peninsular portion of Irian Jaya, c) most of north-western Papua New Guinea, d) a few very minor areas occupied by isolates, and e) the regions in which Austronesian languages are met with (see 1.2.1.). It also extends to the Timor-Alor-Pantar Islands.

2) **The West Papuan Phylum** in the greater, northern, part of the Vogelkop Peninsula, and on northern Halmahera.

3) **The Sepik-Ramu Phylum** in the Sepik Districts and a western portion of the Madang District of Papua New Guinea.

4) **The Torricelli Phylum** in a comparatively small northern part of the Sepik Districts.

5) **The East Papuan Phylum** in the island world to the north-east and east of the mainland.

B) MINOR PHYLA:

1) **The Sko phylum-level Stock** in the northern border area between Papua New Guinea and Irian Jaya.

2) **The Kwomtari phylum-level Stock** in the north-west of the West Sepik District of Papua New Guinea, with one of its geographically discontiguous members across the Irian Jaya border.

3) **The Arai (Left May) phylum-level Family** to the south of the Kwomtari phylum-level Stock in the West Sepik District.

4) **The Amto-Musian phylum-level Stock** in the area between the Kwomtari phylum-level Stock and the Left May phylum-level Family.

5) **The Geelvink Bay Phylum** in eastern coastal areas of the Geelvink Bay and on Yapen Island in Irian Jaya.

6) **The East Bird's Head phylum-level Stock** in an eastern portion of the Vogelkop Peninsula.

The Yuri Isolate in the extreme west of the West Sepik District of Papua New Guinea may be found to be related to Oksapmin which has been tentatively included into the Trans-New Guinea Phylum as a stock-level isolate, but this classification is doubtful (see 2.2.6.9.). If these two languages prove to be related to each other, this would result in the establishment of another minor phylum, i.e. a two-language phylum-level stock.

C) ISOLATES:

In addition to the major and minor phyla mentioned above under A) and B), over half a dozen Papuan languages can, at this stage of our knowledge, not be included in any group. The main reasons for this are inadequate information on them, and insufficient comparison of them with languages which are geographically widely separated from them. It seems likely that as our knowledge advances, most, if not all, of these isolates will eventually be found to be members of established groups, or to be combinable with each other into small groups. However, at present only some vague links are discernable, and it is not possible to say how far these may be attributable to loans resulting from language contacts, or to some very distant relationships.

These isolates are in the West Sepik District of Papua New Guinea and in northern Irian Jaya, and one each in the Morobe and Gulf Districts of Papua New Guinea, and Maisin (see (II) 4.2.1.) in the Northern District.

No major linguistically unknown regions are left in the New Guinea area today, but a few incompletely surveyed pockets remain, mainly in northern Irian Jaya, especially in the mountainous country between the eastern shores of the Geelvink Bay, the Rouffaer and the Mamberamo Rivers, in parts of the Vogelkop Peninsula, and to the east of the Lake Plain in north-eastern Irian Jaya. Some additional Papuan languages may be located on the islands west of Alor and Pantar in Indonesia. The total number of as yet undiscovered Papuan languages, including a possible half dozen or so which may have escaped discovery in Papua New Guinea (for instance in the uppermost Strickland and Carrington Rivers region), is not likely to be in excess of twenty or thirty or so.

TABLE OF GROUPS OF PAPUAN LANGUAGES IDENTIFIED TO DATE

Group	Number of Languages	% of Total	Approximate Number of Speakers	% of Total
Trans-New Guinea Phylum	493	67.9%	2,248,000	81.6%
West Papuan Phylum	24	3.3%	125,000	4.5%
Sepik-Ramu Phylum	98	13.5%	194,000	7.0%
Torricelli Phylum	47	6.5%	77,000	2.8%
East Papuan Phylum	28	3.85%	69,000	2.5%
Minor Phyla	28	3.85%	36,000	1.3%
Sko phylum-level Stock	8		6,600	
Kwomtari phylum-level Stock	5		3,300	
Arai (Left May) phylum-level Family	6		1,600	
Amto-Musian phylum-level Stock	2		300	
East Bird's Head phylum-level Stock	3		16,000	
Geelvink Bay Phylum	4		8,000	
Isolates	8	1.1%	7,000	0.3%
TOTAL	726	100%	2,756,000	100%

As can be seen from the table given above, the five major phyla comprise 690, i.e. 95.0%, of the 726 Papuan languages identified at present, with the Trans-New Guinea, Sepik-Ramu, and Torricelli Phyla containing 638 i.e. 87.9% of the total number of languages. The minor phyla, with a total of 28 languages, account only for 3.85%, and the isolates, with 8 languages, for only 1.1% of the total number of known Papuan languages. The situation is even more favourable for the languages of the major phyla when looking at the number of speakers: the five major phyla have a total of 2,713,000 speakers of their member languages, i.e. 98.4% of the speakers of Papuan languages, with the Trans-New Guinea, Sepik-Ramu and Torricelli Phyla, with a total of 2,519,000 speakers, together scoring 91.4%. The three phyla which have the largest number of speakers, i.e. the Trans-New Guinea, West Papuan and Sepik-Ramu Phyla, with a total of 2,567,000 speakers, together score even 93.1%. The minor phyla have only a total of 36,000 speakers, i.e. 1.3%, and the isolates 7,000 speakers, i.e. 0.3% of the speakers of Papuan languages.

The figures of languages given in the above table should only be regarded as having the value of near approximations. The discovery of one or a few hitherto unidentified Papuan languages, or the recognition of the fact that one or several communalects which until now have been regarded as separate languages are only dialects - both quite common events in Papuan linguistics - would have an effect on the numbers of languages given, and on the percentages relating to individual groups. Similarly, changes in the available information on the number of speakers of individual languages - many of the extant figures are at present only rough estimates - would have some affect on the overall figures and percentages of speakers of the various language groups listed in the table.

LEGEND TO MAPS OF PAPUAN LANGUAGE STOCKS

MAJOR PHYLA

TRANS-NEW GUINEA PHYLUM

MAIN SECTION

Central and Western Part

Finisterre-Huon Super-Stock

1 Finisterre Stock

2 Huon Stock

3 East New Guinea Highlands Stock

Central and South New Guinea-Kutubuan Super-Stock

4 Kutubuan Stock

5 Central and South New Guinea Stock

6 Angan stock-level Family

7 Gogodala-Suki Stock

8 Marind Stock

9 Kayagar stock-level Family

10 Sentani Stock

11 Dani-Kwerba Stock

12 Dem stock-level Isolate

13 Wissel Lakes-Kemandoga Stock

14 Mairasi-Tanah Merah Stock

15 West Bomberai Stock

16 Mor stock-level Isolate

Eastern Part

17 Binandere Stock

18 Goilalan stock-level Family

19 Koiarian stock-level Family

20 Kwalean stock-level Family

21 Manubaran stock-level Family

22 Yareban stock-level Family

23 Mailuan stock-level Family

24 Dagan stock-level Family

SUB-PHYLA

Madang and Adelbert Range Sub-Phylum

Rai Coast-Mabuso (Madang) Super-Stock

25 Rai Coast Stock

26 Mabuso Stock

Adelbert Range Super-Stock

Pihom-Isumrud-Mugil Section

27 Pihom Stock

28 Isumrud Stock

29 Mugil stock-level Isolate
Josephstaal-Wanang Section
30 Josephstaal Stock
31 Wanang Stock
Brahman Section
32 Brahman Stock
Teberan-Pawaian sub-phylum-level Super-Stock
33 Teberan stock-level Family
34 Pawaian stock-level Family
35 **Turama-Kikorian Sub-Phylum**
36 **Inland Gulf Sub-Phylum**
37 **Eleman Sub-Phylum**
Trans-Fly-Bulaka River sub-phylum-level Super-Stock
38 Trans-Fly Stock
39 Bulaka River (or Yelmek-Maklew) stock-level Family
40 **Goliath sub-phylum-level Family**
41 **Oksapmin sub-phylum-level Isolate**
42 **Senagi sub-phylum-level Family**
43 **Pauwasi Sub-Phylum**
Border-Tor-Lake Plain sub-phylum-level Super-Stock
44 Border Stock
45 Tor-Lake Plain Stock
46 **Morwap sub-phylum-level Isolate**
47 **Molof sub-phylum-level Isolate**
48 **Usku sub-phylum-level Isolate**
49 **Tofamna sub-phylum-level Isolate**
50 **Nimboran sub-phylum-level Family**
51 **Kaure Sub-Phylum**
52 **South Bird's Head (or Vogelkop) Sub-Phylum**
53 **Kolopom (or Frederik Hendrik Island) sub-phylum-level Family**
54 **Timor-Alor-Pantar Sub-Phylum**

WEST PAPUAN PHYLUM

Bird's Head Super-Stock
55 Central Bird's Head Stock
56 West Bird's Head stock-level Family
57 Amberbaken stock-level Family
58 Borai-Hattam sub-phylum-level Family
59 Northern Halmahera stock-level Family

SEPIK-RAMU PHYLUM

Sepik Sub-Phylum
60 Biksi stock-level Isolate
Upper Sepik Super-Stock

61 Upper Sepik Stock
62 Ram stock-level Family
63 Tama stock-level Family
Middle Sepik Super-Stock
64 Yellow River stock-level Family
65 Middle Sepik Stock
66 Sepik Hill stock-level Family
67 **Leonhard Schultze sub-phylum-level Family**
68 **Lower Sepik (Nor-Pondo) Sub-Phylum**
69 **Gapun sub-phylum-level Family**
Ramu Sub-Phylum
Yuat Super-Stock
70 Mongol-Langam stock-level Family
71 Yuat stock-level Family
72 Piawi stock-level Family
Ramu Super-Stock
73 Grass Stock
74 Arafundi stock-level Family
75 Annaberg Stock
76 Ruboni Stock
77 Goam Stock

TORRICELLI PHYLUM

78 West Wapei stock-level Family
79 Wapei-Palei Stock
80 Maimai Stock
81 Kombio Stock
82 Urim stock-level Isolate
83 Marienberg stock-level Family
84 Monumbo stock-level Family

EAST PAPUAN PHYLUM

Yele-Solomons-New Britain sub-phylum-level Super-Stock
85 Yele-Solomons Stock
86 New Britain Stock
Bougainville sub-phylum-level Super-Stock
87 East Bougainville Stock
88 West Bougainville Stock
89 **Reef Islands-Santa Cruz sub-phylum-level Family**

MINOR PHYLA

90 **SKO PHYLUM-LEVEL STOCK**
91 **KWOMTARI PHYLUM-LEVEL STOCK**
92 **ARAI (OR LEFT MAY) PHYLUM-LEVEL FAMILY**

93 AMTO-MUSIAN PHYLUM-LEVEL STOCK
94 EAST BIRD'S HEAD PHYLUM-LEVEL STOCK
GEELVINK BAY PHYLUM
95 East Geelvink Bay stock-level Family
96 Yava stock-level Isolate

PHYLUM-LEVEL ISOLATES
97 WARENBORI PHYLUM-LEVEL ISOLATE
98 TAURAP (BOROMESO) PHYLUM-LEVEL ISOLATE
99 YURI PHYLUM-LEVEL ISOLATE
100 BUSA PHYLUM-LEVEL ISOLATE
101 NAGATMAN PHYLUM-LEVEL ISOLATE
102 WASEMBO (GUSAP) PHYLUM-LEVEL ISOLATE
103 POROME (KIBIRI) PHYLUM-LEVEL ISOLATE
104 MAISIN (AUSTRONESIAN-PAPUAN "MIXED" LANGUAGE)

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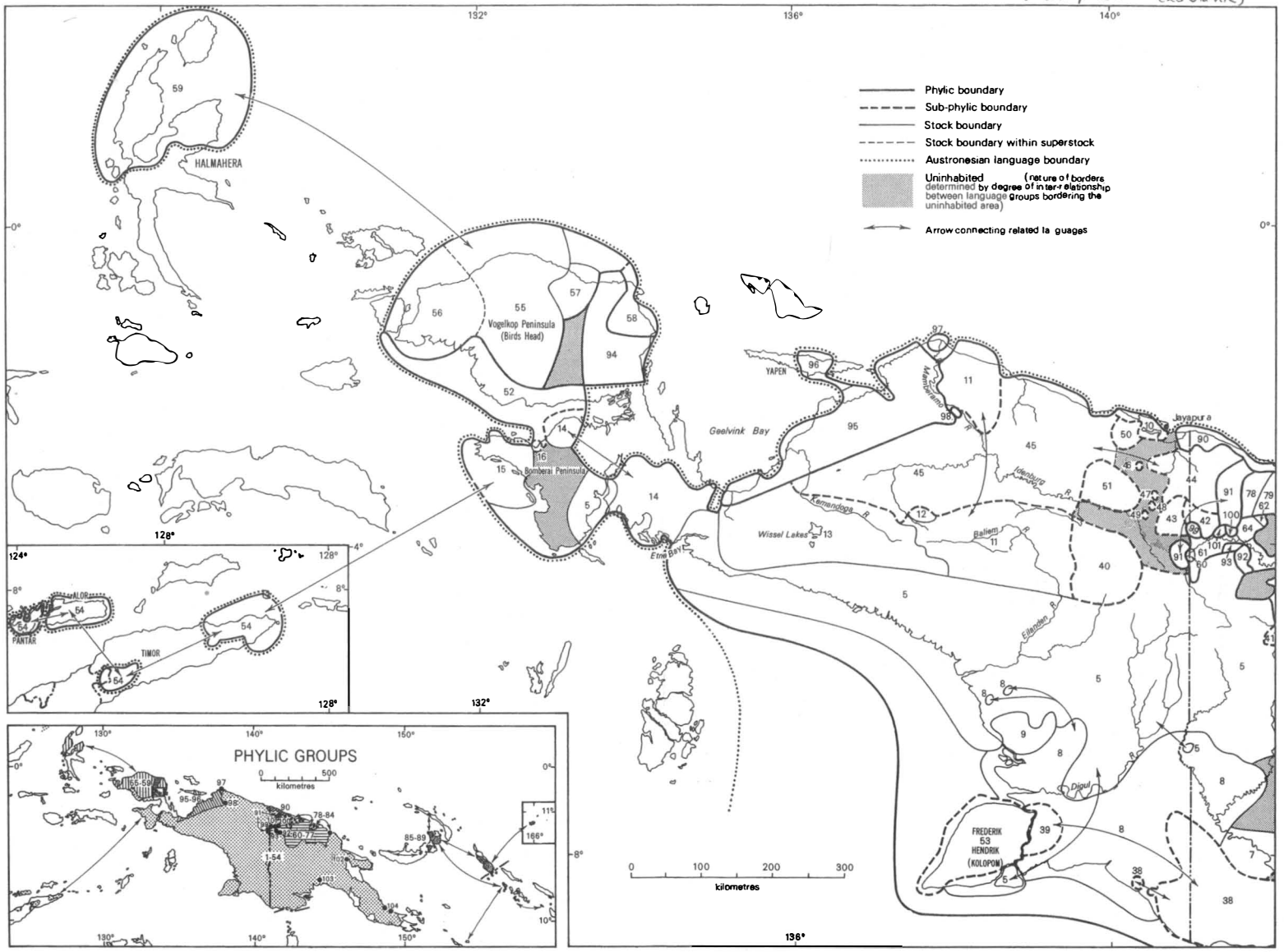

MAP II: PAPUAN LANGUAGE STOCKS - IRIAN JAYA

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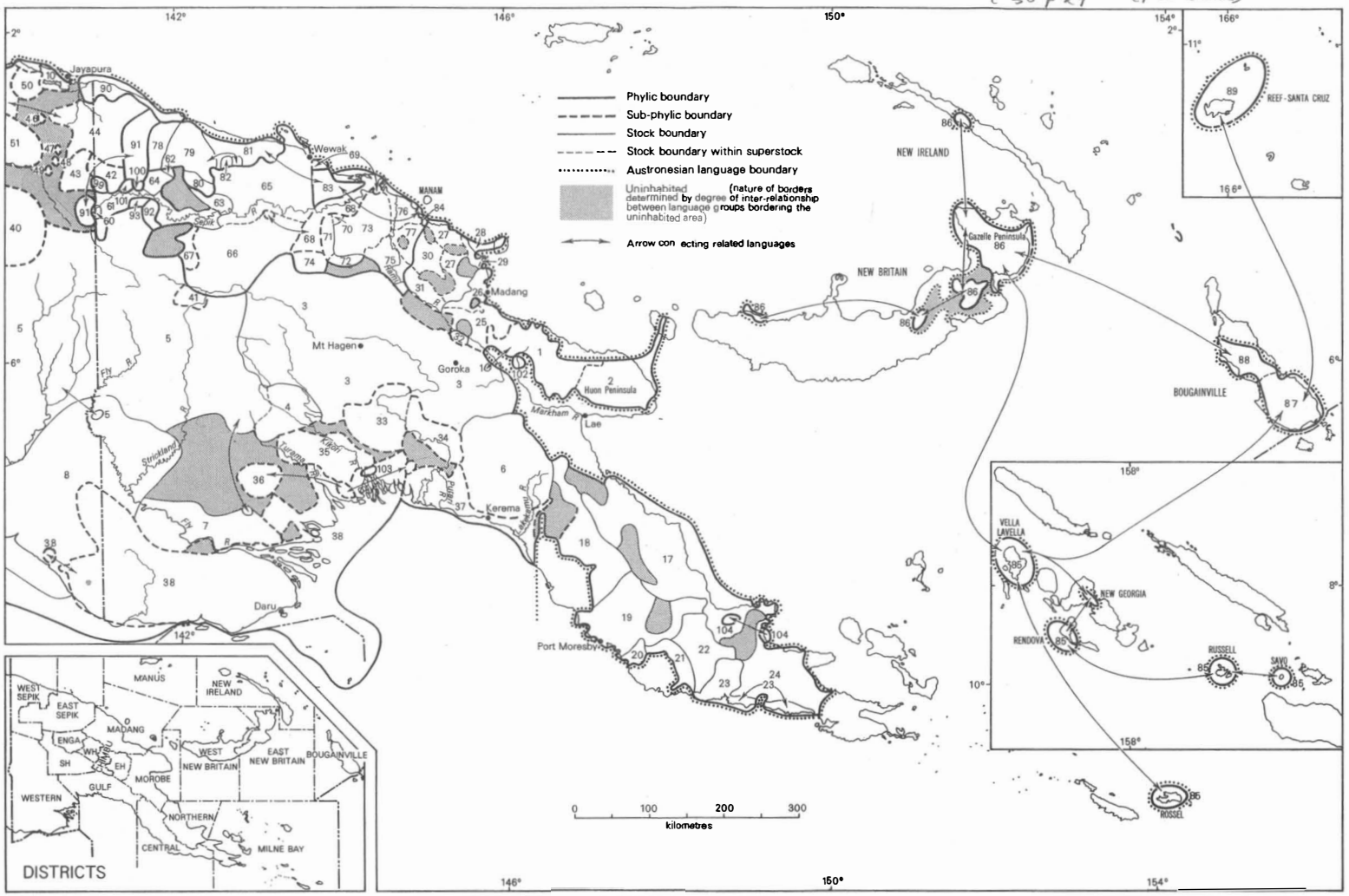
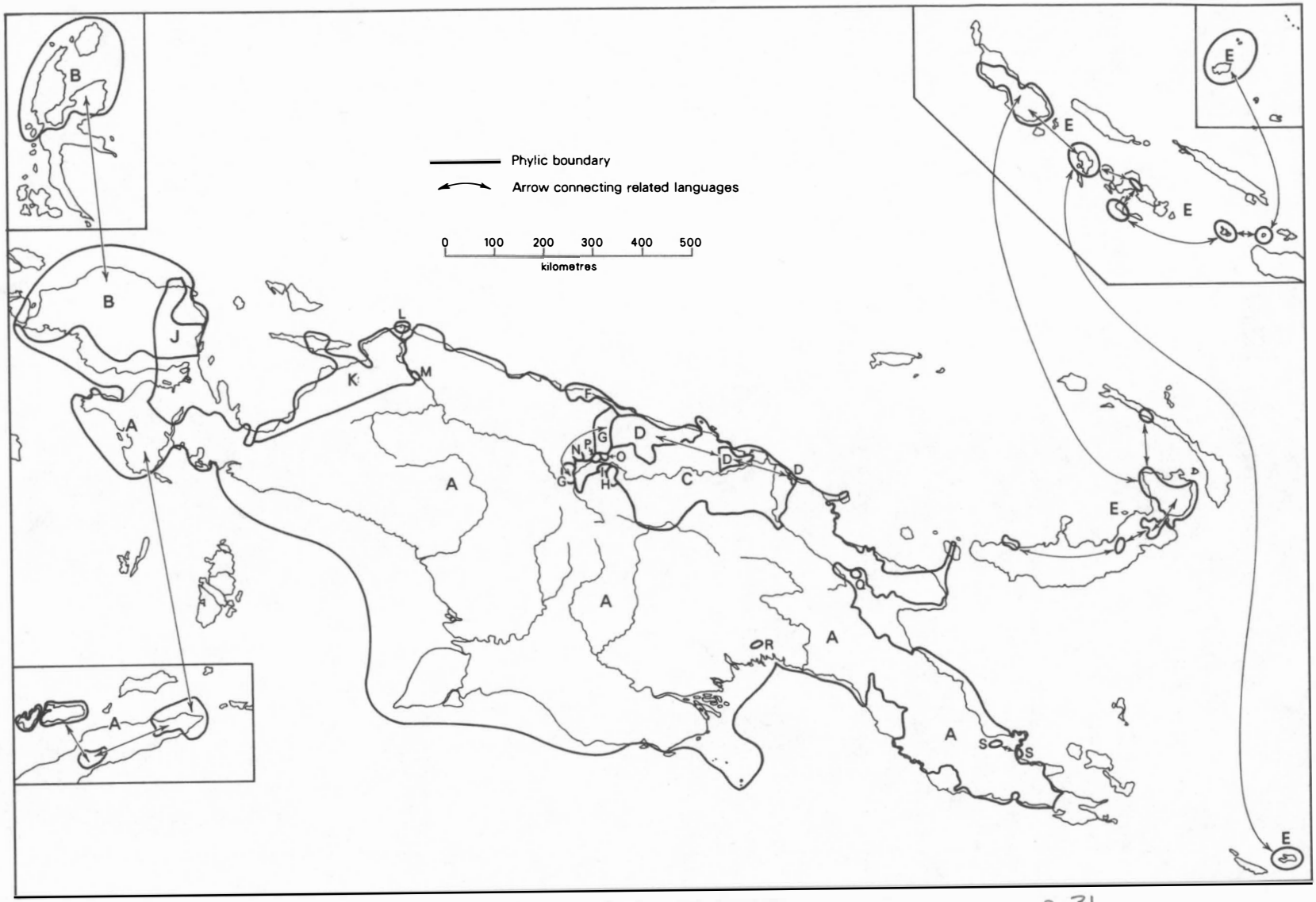


MAP I: PAPUAN LANGUAGE STOCKS - PAPUA NEW GUINEA



MAP III: PAPUAN PHYLIC GROUPS

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LEGEND TO MAP OF PAPUAN PHYLIC GROUPS

A Trans-New Guinea Phylum
B West Papuan Phylum
C Sepik-Ramu Phylum
D Torricelli Phylum
E East Papuan Phylum
F Sko phylum-level Stock
G Kwomtari phylum-level Stock
H Arai (Left May) phylum-level Family
I Amto-Musian phylum-level Stock
J East Bird's Head phylum-level Stock
K Geelvink Bay Phylum
L Warenbori phylum-level Isolate
M Taurap (Boromeso) phylum-level Isolate
N Yuri phylum-level Isolate
O Busa phylum-level Isolate
P Nagatman phylum-level Isolate
Q Wasembo (Gusap) phylum-level Isolate
R Porome (Kibiri) phylum-level Isolate
S Maisin (Austronesian-Papuan) "mixed" language

N O T E

1. This figure was arrived at by adding up the established and/or estimated numbers of speakers of individual Papuan languages as given in the various chapters in this volume. In some instances in which no figures were available, rough estimates were made on the basis of the known population distribution and densities in given areas. Seeing that most of the figures given are based on population counts which are several years in the past, and population increase in the New Guinea area has been considerable in recent years, it is very likely that the total number of speakers of Papuan languages is at present greater than indicated, by perhaps as much as 3-5%.

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DIVISION 2.

PAPUAN LANGUAGES

PART 2.1.

HISTORY OF RESEARCH IN PAPUAN LANGUAGES

2.1.1. A HUNDRED YEARS OF PAPUAN LINGUISTIC RESEARCH: EASTERN NEW GUINEA AREA

D.C. Laycock

2.1.1.1. INTRODUCTION

In a book entitled *Wanderings in the Interior of New Guinea*, published just on one hundred years ago, the author, a certain Captain J.A. Lawson, summed up the language situation of the island as follows:

> But one language appears to be spoken on the island, and of that, many of the words are, without doubt, derived from the Malay, Hindoostanee, Chinese, and other tongues. It is easily learned, or, at least I found no difficulty in mastering it, and is a pleasant-sounding language, especially as it is spoken with a clear, distinct pronunciation, without any unpleasant guttural twang. (Lawson 1875).

Unfortunately, the book was a hoax, written by someone who in all probability had seen nothing of New Guinea but its coastline, if that;[1] and the statements on language are as reliable as the statements on natural history, which presented a picture of New Guinea teeming with bison, hares, goats, apes and 'Papuan tigers'.

The fact, however, that such a book could have been published at all, and for a while taken seriously, is an indication of the state of knowledge of the island of New Guinea, in all its aspects, just a century ago. As such it makes a convenient starting point for a survey of linguistic research in western New Guinea for the last hundred years, although a few earlier sources will need to be mentioned.

2.1.1.2. GENERAL SOURCES

The history of research in Papuan languages has already been described, up to about 1970, by Laycock and Voorhoeve (1971); but the spate of publication from the early 1970's means that the present article is much

Laycock, D.C. "A Hundred Years of Papuan Linguistic Research: Eastern New Guinea Area". In Wurm, S.A. editor, *New Guinea area languages and language study, Vol. 1, Papuan languages and the New Guinea linguistic scene.* **C-38:43-116**. Pacific Linguistics, The Australian National University, 1975. DOI:*10.15144/PL-C38.43*

more than just an updating of that work. A brief history of New Guinea linguistics in general is provided by Hooley (1965), who deals with Austronesian (AN) languages as well as Non-Austronesian (NAN), i.e. Papuan, languages. The motives for studying the languages of Papua New Guinea at all are considered by Laycock (1969f). A number of surveys of the languages of New Guinea have been published, and these, while now somewhat outdated as far as the linguistic classification is concerned, often provide valuable historical information, and a guide to older material; principal among these are Capell (1954, 1962a, 1969a), and for western New Guinea, Anceaux (1953a, 1953b) and Cowan (1959a, 1959b). Surveys for individual areas are discussed in the relevant sections, but Hooley (1969) has an interesting account of the making of surveys in general. The most modern, and probably most readable, account of the history of New Guinea in general is probably Souter (1963), though Biskup *et al.* (1968) is also very useful; for the period prior to the twentieth century, there is much to be found in Wichmann (1909-1912: early exploration), in Neuhauss (1911) and Zöller (1891) (both for the former German New Guinea), and in Murray (1912) (Papua). The bibliographies of Klieneberger (1957) and Taylor (1965), and the ethnographic bibliography of the Australian National University (1968) are still useful starting points for older material; but all works of significance to NAN linguistics have been included in the bibliography to this chapter.

The names of languages cited in this article follow what I consider to be the best and most established name in the scientific literature; opinions on this may vary, and occasionally languages are given alternative names. A statement on the types of names that have been typically given to Papuan languages can be found in Laycock and Voorhoeve (1971), and a statement of the principles on which I have coined new names can be found in Laycock (1973).

2.1.1.3. EARLY RECORDING OF PAPUAN LANGUAGES

New Guinea was not quite as unknown in the nineteenth century as Lawson's book suggests. New Guinea had been sighted by European explorers as early as the first few decades of the sixteenth century,[2] and wordlists from some of the languages encountered began to be collected not long after.[3] The first languages recorded were, however, Austronesian (AN); non-Austronesian (NAN, 'Papuan') languages were not recorded for two to three centuries more. The main reasons for this would seem to be that the ships of the early explorers reached only the coast and offshore islands, typically the habitat of speakers of AN languages; also, the AN-speakers possessed sea-going canoes with which they could establish contact with the vessels of the visitors. Few explorers were hardy enough to

venture much upon the mainland of New Guinea itself, let alone penetrate into the interior, where the majority of the NAN languages were spoken. As it happened, however, the very first recording known to have been made of a NAN language was of a language spoken on an island: the language of Miriam, in Torres Straits, which was taken down in 1822 - but the copy has not survived (Ray 1907). Miriam was not to be recorded again until 1836 (King, P. 1837); in the meantime, the credit for producing the first extant recording of a Papuan language had gone to a crew member and a passenger on the Dutch Government vessel *Triton*, who in 1828 collected a short Kamoro vocabulary at Utanata (Mimika coast, West Irian; Modera 1830, Müller 1857).

The pace of recording during the remainder of the nineteenth century was slow, and had to wait, essentially, for annexation of the various parts of New Guinea and its surrounding areas by the European powers (Papua by Britain, and the north - Kaiser-Wilhelmsland - by Germany, in 1884). Prior to this period we have only further wordlists of Miriam (Jukes 1847, reprinted in Gabelentz and Meyer 1882 and Stone 1880); also MacGillivray 1852). D'Albertis (1880) includes a few short vocabularies from Papua, as does Lawes (1879). Extensive wordlists were collected in the pre-colonial period by the Russian biologist and explorer N.N. Miklukho-Maklaĭ, who spent the years 1871-1872 and 1876-1877 on the Rai Coast; but only a few brief wordlists were published approximately contemporaneously (Miklukho-Maklaĭ 1874, 1876; also some lists (mainly AN) in Gabelentz and Meyer (1882)), the remainder not appearing until the issuing of his complete words (Miklukho-Maklaĭ 1950-54).[4]

After annexation, interest in New Guinea increased, and a number of vocabularies, and first grammatical sketches, were published in the last decades of the century. The first extensive comparative lists made their appearance shortly afterwards; Zöller published lists from twenty-four languages (most of the NAN languages coming from the Madang area) in 1890, and the following year added many more languages, including the lists collected on the voyage of the M.V. *Ottilie* up the Sepik River in 1886. In this period also Flierl produced (in Grube 1895) the first detailed material on Kâte, a language which was to become increasingly important in the Morobe area. In Papua, missionaries such as James Chalmers (1887, 1897) and S. MacFarlane (Chalmers and MacFarlane 1888) began to produce the first materials in NAN languages of mainland New Guinea.

The distinction between AN and NAN languages was becoming clearer, although it was by no means clear-cut. Müller (1876-1888) had labelled the languages of Numfoor (Irian Jaya) and Nengone (Loyalty Islands) as 'Papuan', more on the basis of racial characteristics than on linguistic grounds,[5] while both the Gabelentzes, and Meyer (Gabelentz 1861-1879);

Gabelentz and Meyer 1882) included among 'Melanesian' languages NAN languages such as Savosavo - as also does Codrington (1885). The real differences between the two types of languages were first formalised by Ray (1893) - whose work leads us abruptly into the twentieth-century phase of Papuan linguistic research, although two other collections of wordlists (Ray 1894, 1895) still fall into the nineteenth century. From this time on, however, the amount of data available increases so rapidly that it becomes necessary to survey research with major subdivisions between the historical - but often overlapping - areas of Papua and New Guinea, and 'Island Melanesia'. Since self-government in December 1973, such divisions (with the exception of the border between Papua New Guinea and the British Solomon Islands Protectorate) may have become administratively less significant.

2.1.1.4. AREA STUDIES

2.1.1.4.1. *PAPUA (BRITISH NEW GUINEA)*

The early years of research into all the accessible languages of the south-eastern section of the island of New Guinea were dominated by Ray, who published a considerable amount of material (1911, 1912a, 1912b, 1914, 1929, 1933, 1938, 1939) on AN and NAN languages alike. His work is characterised by a quest for accurate data and a considerable insight into the significant features of the languages he wrote on; unfortunately much of his material is vitiated by the fact that he did not collect it personally, but used the not always satisfactory recordings of missionaries in various areas. Some of these missionaries also published their own material - people such as J. Chalmers, J.H. Holmes, W.G. Lawes, V.M. Egidi, E.B. Riley, and W.M. Strong (bibliography, various dates) - but most of their material has now been superseded, and is of interest (as also are the wordlists of languages in the British New Guinea (Papua) *Annual Reports*, from 1890 on) only to these wishing to document the history of a particular language. As is detailed elsewhere in this volume (Chapters 1.0., 2.5., 2.6.1., 2.6.2., 2.7., 2.9.) most of the NAN languages of Papua (apart from the isolates) belong to the Trans-New Guinea Phylum, though the number of stocks - let alone families - is quite large. Realisation of these relationships came slowly, however, and is almost entirely a product of research in the sixties. Prior to this, only the usual short vocabularies exist. In the Western District, for example, we have - apart from a grammar and extensive vocabularies by Ray (1907) of the relatively well-studied Miriam (and short grammars, notes and numerous vocabularies by him in the same volume) - only some lengthy wordlists of the Fly Delta, Trans-Fly and Gogodala areas (Riley (and Ray) 1930-31), a wordlist of Suki

in the *Annual Report* for 1919-20, and some additional words in Williams (1936), together with some items in the wide-ranging vocabularies of Ray (e.g. 1912c), a general survey of the languages of the area with notes and vocabularies in Ray 1923, and a Kiwai grammar (also by Ray: 1933), to represent the period before World War II; to these we should perhaps add a Gogodala ethnography by Wirz (1934) for the background information it contains. The first attempt at any kind of overall classification of the languages of the area was Wurm's (1951) study on the Kiwai languages; new classifications can be found in Wurm (1971a, 1973). Subsequently, the entry of the Unevangelized Fields Mission, with an interest in linguistic work, made more data available, in languages such as Awin, Ninggerum, Pare, Suki, Boazi, and Zimakani; Bible translations have been made in two Kiwaian languages, and Suki and Gogodala. Two languages of the area, Ninggerum and Yonggom, were placed by A. Healey into his Ok Family (1964), but the major subsequent progress in our knowledge of Western District languages has been due to Voorhoeve (1968, 1970a, 1970b), who still has unpublished data on languages of the Nomad subdistrict. The Summer Institute of Linguistics (S.I.L.) has one team working in Samo and Kubo, and a tentative classification of these and other languages of the Mt. Bosavi region has been published in Franklin, ed. 1973 (Shaw 1973).

The situation is similar in the Gulf District. Early material includes wordlists by Bevan (1890), Holmes (1903; 1913 - Koriki grammar), and Ray (1895); a map, notes and wordlists in Ray (1907) summarise knowledge to that date, and more detailed information is given by Ray (1914). Some lists appear in the Papua *Annual Reports*: 1914-15 Elema, 1916-17 Mamuro, 1917-18 Kibiri, Urama, 1920-21 Elema, Pepeha, 1921-22 Ro, Sau, 1926-27 Foi, Karima; but in spite of detailed ethnographic information by Williams (1924, 1940, 1940-41), the situation did not begin to become clear until Franklin's preliminary survey (1968a). Since then, a more detailed study of the Gulf District languages has appeared (Franklin 1973a; also 1973b, 1973c), with contributions, in Franklin, ed. 1973, on families and adjoining areas by Brown (1973: Eleman Family), Lloyd (1973: Angan Family), MacDonald (1973: Teberan Family), Wurm (1973: Kiwaian Family), Dutton (1973b: cultural items; also vocabularies in Dutton and Pawley 1975a), and Franklin and Voorhoeve (1973: languages on the border of the district). The MacDonalds published on Dadibi (1974), and an extensive pedagogical grammar of Kapau (an Angan language) has appeared (Oates and Oates 1968), as well as a Toaripi dictionary (Brown 1968). The phonology of Baruya, one of the Angan (Kukukuku) languages just over the border of the Eastern Highlands District, has been described by Lloyd and Healey (1968), and the gender system by Lloyd (1969). Angaataha and Wojokeso, Angan languages in the Morobe District, are the subjects of papers by Roberta Huisman

(1973) and Ronald Huisman (1973), and by D. West (1973) and D. and E. West (1974), respectively. Trefry worked in Pawaian (1965, 1972).

In the Central District, the coastal languages in the west are AN, and outside the scope of this paper. The Goilala languages in the north have been surveyed by Steinkraus and Pence (1964); they list mission translations into Fuyuge, Tauade, and Kunimaipa, which includes not only the early listings by Ray (1929) and the Fuyuge and Afoa (=Tauade) data by Ray and Strong in the appendixes to Williamson (1912), but also more recent articles on Kunimaipa (which overlaps into the Northern District). Such articles, including later publications, are mainly the results of Pence's work on the language (Pence 1964, 1965, 1966, 1968, 1971; Pence *et al.* 1970) and of the Duberts' in Biangai (Duberts 1974). The coastal areas east of Port Moresby are now fairly well known; Dutton has surveyed the Rigo area (1970) and has provided a very full listing, with historical data, for all the known languages of central and south-east Papua (1973a). The Mulaha language, reported by Ray (1929) is confirmed as extinct by Dutton, as a result of absorption by Motu speakers, but its family relationships (Kwalean) have been determined. Dutton has also surveyed separately (1971a) the languages of south-east Papua, spanning the Abau subdistrict of the Central District, the Baniara subdistrict of the Milne Bay District, and part of the Northern District; he has also written a transformational grammar of Koiari (1969a) and has edited further studies on the area (Dutton, ed. 1975 containing contributions by himself (Dutton 1975: Koita), the Garlands (1975: Mountain Koiari), Olson (1975: Barai), Austing and Upia (1975: Ömie), Thomson (1975a: Magi (=Mailu)), the Weimers (1975: Yareba), the Farrs (1975: Korafe) and Richert (1975: Guhu-Samane) on languages of the area under discussion), as well as providing data lists (Dutton and Pawley 1975b).

The language of Daga in the Milne Bay District has a grammar and phonological study as first documentation (Murane 1974; Murane and Murane 1972); otherwise, there is little specific information to be found on languages of this region, apart from that provided by Ray (1938) and Capell (1943) - the latter work dealing mainly, but not exclusively, with the AN languages, which predominate in this region. More recently, Capell has shown (1973) that the controversial (AN or NAN?) language of Maisin (for which see Strong 1911a, Ray 1911) is NAN with strong AN influence (see also (II) 4.5.1.); conversely, Dutton (1971b) has established the equally controversial Magori (see (II) 4.5.2.) as an AN language heavily influenced by the neighbouring NAN language of Mailu (grammar by Saville 1912, dictionary by Lanyon-Orgill 1944 and Saville 1935a,b; see also Malinowski 1915 and a recent contribution by Thomson (1975a,b)).

The situation is very different in the Northern District of Papua, an area which is also partly covered by the Dutton and Franklin surveys. S.I.L. teams are working in a number of languages of the district, and have published on Yareba (Weimer 1972; Weimer and Weimer 1970, 1972, 1975), Managalasi (Parlier 1964), Ömie (Austing 1974; Austing and Upia 1975) and Orokaiva (Healey *et al.* 1969). Also being studied are the Koiarian language of Barai (Olson 1973, 1975) and the Binanderean languages Ewage and Korafe. The Binanderean languages, which overlap into the Morobe District, have been described as a whole by D. Wilson (1969a), who has also written two papers (1969b, 1969c) on Suena, a Binanderean language located in the Morobe District, as well as a grammar of it (Wilson 1974). Earlier, but still valuable, descriptions of Binandere were written by King (1901, 1926), and Capell (1969c) has added a paper on the Binandere verb. Korafe, also of the Binanderean Family, has been studied by the Farrs (1974, 1975).

The remaining languages of Papua, on the islands to the east of the tail of Papua, are almost all AN; the one exception, Yele, will be dealt with under Island Melanesia. The languages of the Southern Highlands will be treated below in 2.1.1.4.2.

2.1.1.4.2. *NEW GUINEA (KAISER-WILHELMSLAND)*

Continuing anti-clockwise around eastern New Guinea, we reach, next after the Northern District, the Morobe District, where the total linguistic situation has only recently become clear (Claassen and McElhanon 1970, and Hooley and McElhanon 1970) - papers which largely supersede both Hooley 1964 and McElhanon 1970a (see also 2.8.1. in this volume). As the authors point out, the area is divided linguistically by the Markham River valley, throughout most of which AN languages are spoken. To the south and south-east of the Markham are found Angan (formerly called Kukukuku), Binanderean, Kunimaipan languages already discussed in the previous section, and one or two members of the East New Guinea Highlands Stock, discussed below. Guhu-Samane, a language showing stock-level relationship to the Binanderean languages, has been studied by an S.I.L. team (Richert 1965a, 1965b, 1975; Richert and Richert 1972; Richert and Healey 1974). North of the Markham the linguistic position of the area is more complex, a fact which has led to considerable confusion in the literature of the area, as McElhanon (1970f) points out in a history of linguistic research of the Huon Gulf, in more detail than we can provide here. McElhanon also has a detailed study of Finisterre-Huon linguistic typology (1973). The first published classification of NAN languages of the area (apart from the already-mentioned vocabularies of Zöller (1890, 1891) were those of Schmidt (1900-01) and Ray (1902), but these - as well

as the later summaries of Schmidt (1926) - suffer from being based only on short wordlists, and in failing to sort out adequately the NAN languages from the AN. (Confusion between the AN and NAN languages of the Morobe District continued until very late; Hooley (1964) cites the Awara dialect of the NAN Wantoat as AN, and the Sio language (AN) as NAN.) One of the reasons for the unsatisfactory state of knowledge of Huon Peninsula languages until the 1950's was the early decision of the Neuendettelsau Mission (established 1886; see history by Pilhofer (1961-63)) to simplify the language situation by the extensive use of two lingue franche, the AN Jabêm in coastal areas, and the NAN Kâte in inland areas around the Sattelberg - a decision which led to relative neglect of the other 'Kai' languages. Kâte itself has been extensively studied (Grube 1895; Dempwolff 1905, 1920, 1925; Pilhofer 1927a, 1927b, 1933, 1953; dictionary by Keysser 1925, Flierl and Strauss, eds. 1976), and Pilhofer also wrote fairly extensively on neighbouring languages (1928, 1929); but most of our knowledge of the latter has come from more recent studies by members of the Summer Institute of Linguistics, principally on Selepet (McElhanon 1967b, 1968, 1970a, 1970b, 1970c, 1970d, 1970e, 1972, 1974; also the McElhanons 1970), Wantoat (Davis 1961, 1964a, 1964b, 1969, 1972, 1973), Weri (Boxwell 1967, Boxwells 1966, 1974), Komba (Southwell 1974a, 1974b; McElhanon 1969), Nabak (Fabian *et al.* 1971) and Urii (Webb 1974). A grammar of Ono by the missionary Wacke is also available (1931). Schmitz (1960b) includes language information in his Wantoat ethnography.

The linguistic history of the Madang District resembles that of the Morobe District, in that virtually all early linguistic research was carried out by missionaries; it differs, however, in that no lingua franca was found for the area except for the AN Gedaged (or Bel) language used in a limited coastal region (with a corresponding emphasis on the value of Pidgin - see Höltker 1945), and also in that the missionaries were not Protestants, but Roman Catholics, of the Order of the Divine Word (SVD). This had important consequences for the quality of their research, for the SVD Order laid stress on training its members in the collecting of ethnographic and linguistic data,[6] and provided an outlet for publications in the journal *Anthropos* (founded 1906), as well as a forum for discussion with missionaries all over the world through the associated Anthropos-Institut (founded 1932). (The work on the Anthropos-Institut is reviewed in these volumes in (III) 7.9.8., by Z'graggen; of the many hundreds of publications of its members relating to New Guinea, only those of major linguistic interest are singled out for mention here.) Much of the data was collected together from the work of individual missionary-priests by the already-mentioned W. Schmidt, who himself never went anywhere near the Pacific. The languages which received most attention in the early

period were those adjacent to the settlement at Alexishafen, namely, Bongu and Bogadjim (which were also the languages studied by Miklukho-Maklaĭ wordlists in Miklukho-Maklaĭ: 1950-54, Vol.3 and comments by Loukotka (1953)), but almost the only extant published work from this period is a Bongu grammar by Hanke (1909). Further west, at Bogia, the Monumbo language received early attention (Pöch 1908, Vormann and Scharfenberger 1914; also Höltker 1964) - a fact which gave a false picture of the 'unrelatedness' of Papuan languages, since all the languages related to Monumbo (and the adjacent Lilau) lie well to the west, in the Sepik region.[7] A small amount of mission literature was printed in Lilau (formerly called Ngaimbon), Nobonob, and Amele, but only short wordlists (e.g. Hanke 1905; Schebesta 1908, 1938, 1940; Tranel 1952; Loukotka 1958) and small-scale surveys (Kaspruś 1945, 1949) are available as data on the other languages before the 1960's - with the notable exception of a Bogia area survey by Capell (1952a). The inland languages, especially those along the Ramu, were virtually unknown; a short wordlist of Giri, by Höltker (1961) is almost the only counter-example. However, the work of Pawley (1966, 1969, 1970) and Biggs (1963) has provided fairly good coverage of Kalam, and the S.I.L. has been working in four languages (Rawa, Siroi, Kalam and the neighbouring Kobon just over the District border), with publications beginning on these languages (Dawsons 1974). Z'graggen (also an Anthropos member) has published on Saker (1965), but has done even more valuable work in surveying the entire Madang District, and classifying the languages therein, in a series of articles of increasing detail (1968, 1970, 1971, 1975, and also in this volume - see 2.8.2.).

SVD missionary-linguists were also very active in the Sepik area (now the East and West Sepik Districts), after the establishment of the mission at Tumleo (near Aitape, formerly Berlinhafen) in 1886, and that at Marienberg, on the Sepik River, not long after. The same progress of the Anthropos-inspired research is seen as in the Madang District; early enthusiasm, and documentation of the languages in the neighbourhood of the mission, followed - after the cessation of German administrative control in 1914 - by growing disillusionment, and increasing reliance on Pidgin, once the complexity of the linguistic situation had been realised. Certain dedicated researchers continued working on languages and ethnography during the interbellum period - important names for the Sepik region being Frs. Höltker, Kirschbaum, J. Schmidt, Erdweg, Gehberger, Gerstner, Laumann, Klaffl, Vormann, Spölgen, and Becker (bibliography, various dates) - but disillusionment, retirement, the activities of the Japanese during World War II, and death finally stemmed the flow of their publications, and most of the New Guinea material that has appeared since the last war has been archival data from the still extensive files of the Anthropos-

Institut. Some potentially useful grammars (e.g. Kirschbaum's grammar of Buna, and Fastenrath's grammar of Warapu) were destroyed or confiscated by the Japanese; other material seems to have succumbed to the ever-present tropical dangers of insects, rot, or loss in transit. Major contributions of SVD members include the extensive data on languages of the Aitape area (mostly, however, AN) by Klaffl and Vormann (1905; edited by W. Schmidt), grammars of Valman (Schmidt and Vormann 1900; Spölgen and Schmidt 1901; Murik (Schmidt, J. 1953; also 1924-26, 1933) and Mountain Arapesh (Gerstner 1963), and the preliminary establishment or perception of relationships by Kirschbaum (1922: Ndu Family) and Laumann (1951, 1952, 1954: Nor-Pondo Stock). Höltker (1938) provides the only published data on Gapun, although Laycock has unpublished field notes.

Up to World War II, the Sepik region was a favourite area for ethnographic research, and ethnographers such as Roesicke, Reche, Schlaginhaufen, Thurnwald, and Schultze (during German administration: bibliography, various dates) and their interbellum successors such as Mead, Fortune, Kaberry, Bateson, and Whiting (bibliography, various dates) added considerably to our knowledge of Sepik populations, though the linguistic data provided by them was in most cases slight. The two notable exceptions are the highly accurate linguistic mapping of the middle and lower Sepik by the geographer Behrmann (1924, also 1922), and Fortune's grammar of Mountain Arapesh (1924). (Laycock (1973b) correlates anthropological and linguistic research in the Sepik area, and shows that both have been confined to a relatively small area.) Manuscript notes on Sepik languages (mainly Banaro, Kambot, and Angoram) by Thurnwald are held by Laycock, and will ultimately be edited for publication in *Pacific Linguistics*.

Since the 1960's there has been a gradual increase of interest in the Sepik region. Laycock (1965a) documented the languages of the Ndu family extensively, and established the Torricelli Phylum (1968) and preliminary phonologies of three languages of the Upper Sepik Stock (1965b); a more recent work (1973) documents all the known languages of the East and West Sepik Districts. Details of individual languages have mostly been provided by S.I.L. linguists, notably for Iatmul (Staalsen 1966, 1969, 1972), Manambu (Allen and Hurd 1972, Farnsworth 1974), Mayo (Foreman 1974; Foreman and Marten 1973), Iwam (Conrad 1971, 1972), Kwoma (Washkuk) (Kooyers 1974; Kooyers and Bee 1971), Sanio-Hiowe (R. Lewis 1972; S. Lewis 1972), Anggor (R. Litteral 1972, 1973; S. Litteral 1972), Hewa (Cochran 1968), Telefol (A. Healey 1962, 1964a, 1964c; P. Healey 1964, 1965a, 1965b, 1965c, 1965d, 1966), Tifal (Steinkraus 1969; Healey, P. and Steinkraus 1974) and Oksapmin (Lawrence 1971, 1972a, 1972b); work is also progressing in Au (Scorza 1973), Amanab, Mianmin (Smith and Weston 1973a, 1974b), Bahinemo, Ama, Alamblak (Bruce 1975), Abelam (Wilson, P. 1973), Boiken (the Freudenburgs

1974), Sawos (Gaikunti), and Mountain Arapesh. Pike (1964) wrote on the three-vowel system of the Ndu family, described also (independently) by Laycock in his 1962 dissertation (published as Laycock 1965a). Further materials on Bahinemo and Oksapmin appear in Longacre (1972). S.I.L. members have also carried out a number of valuable surveys in the Sepik region, namely Glasgow and Loving (1964: Maprik subdistrict), Loving and Bass (1964: Amanab subdistrict), Dye and Townsends (1969: Sepik Hill languages), and Conrad and Dye (1975: Upper Sepik and May River area).

Further ethnographic research undertaken in the 60's and 70's (for which see Laycock 1975a) can be expected to fill out the linguistic picture, but there is little of direct linguistic data except Haberland (1966). Juillerat (1972) includes a list of Amanab plant names, and a note on phonology.

Some of the languages mentioned above, especially Oksapmin and the Ok languages of the Telefomin area, are more 'Highlands' in type than strictly Sepik. In the Highlands proper - taking the three Highlands Districts (Eastern, Western and Southern Highlands) as a unit, linguistic research has been proceeding at a pace that is difficult even to document. There is, however, little to report on the history of linguistic research, as the first extensive reporting of Highlands languages dates only from the survey of Capell (1949a), although some missionaries had been working on languages before that date - noteworthy among them being the extensive work on all aspects of the Mbowamb (Medlpa-speaking) culture by Vicedom and Tischner 1948 (and, also, Strauss and Tischner 1962), and the Gende and Wahgi publications of Aufenanger (1938, 1940, 1952, 1953a, 1953b). Other important contributions have been made by researchers of varying affiliation, namely, Berndt (1954), B. Blowers (1970), B. and R. Blowers (1970), Crotty (1951), Haiman (1972), Hamp (1959), R. Lang (1970), A. Lang (1971, 1973, 1975), Luzbetak (1954, 1956), McVinney and Luzbetak (1964), Nilles 1944, 1951, 1969), Renck (1967, 1975, 1976), Rule (1965), Salisbury (1956a, 1956b), and Schäfer (1953); but most of the detailed work on individual languages has been carried out by members of the Summer Institute of Linguistics, whose base at Ukarumpa in the Eastern Highlands is ideally situated for the study of these languages. Approximately thirty Highlands languages are being studied; some of these, on the borders of other districts, or not forming part of the East New Guinea Highlands Stock, have already been dealt with. Specific work in other languages includes: Agarabi (Goddard 1967, 1974; Bee *et al.* 1973), Asaro (G. Strange 1965; D. Strange 1973), Auyana (McKaughan 1973b; McKaughan and Marks 1973), Awa (R. Loving 1966, 1973a, 1973b; R. and A. Loving 1961, 1962, 1975; A. Loving and McKaughan 1964; R. Loving and McKaughan 1964; McKaughan 1973b; McKaughan and Loving 1973), Benabena (Robert Young 1964, 1971; the Youngs

1965), Binumarien (the Oatridges 1966; the Oatridges and Healey 1973), Chuave (Swick 1966; Thurmann 1973), Fasu (Loeweke and May 1964, 1966), Fore (Nicholson 1961; the Nicholsons 1961, 1962; Pike 1963; Pike and Scott 1963 - with comment by Pilch (1970); Scott 1963, 1968, 1973), Gadsup (C. Frantz 1962; C. and M. Frantz 1966; Frantz and McKaughan 1964; McKaughan 1973d), Gahuku (Deibler 1964, 1971), Golin (Bunn 1974; the Bunns 1970), Kamano (Payne and Drew 1961, 1966), Kanite (McCarthy 1965; Gibson and McCarthy 1961, Harris 1973), Kewa (J. Franklin 1965; K. Franklin 1963, 1964, 1965a, 1965b, 1967a, 1967b, 1968b, 1969, 1970b, 1971a, 1973d, 1973e; the Franklins 1961, 1962), Kuman (Trefry P. 1965; the Trefrys 1967), Narak (Cook 1966; Hainsworth 1972), Pawaia (Trefry D. 1965), Maring (Woodward 1973), Nii (the Stuckys 1973), Salt-Yui (Irwin 1970, 1975), Siane (James 1966, 1970; James and Lucht 1962), Tairora (Vincent 1973a, 1973b, 1973c; the Vincents 1961, 1962; Kerr 1973a; McKaughan 1966), Usarufa (Barker and Bee 1961; Bee 1961b, 1965b, 1965c, 1973a, 1973b; Bee and Glasgow 1962), Waffa (Stringer and Hotz 1971a, 1971b), and Wiru (Kerr 1966).

Works involving a number of Highlands languages include Young, Rosemary (1962: Kanite, Kamano, Benabena, Gahuku), Bee (1965a), Kerr (1973b), Longacre (1970, 1972), McKaughan (1964), McKaughan, ed. (1973), Peck (1972), and Trefry (1965), as well as the various linguistic surveys (Deibler and Trefry 1963: Chimbu subdistrict; Bunn and Scott 1962: Mount Hagen subdistrict), and three collections of papers: S.I.L. (1961), Elson, ed. (1964), and McKaughan, ed. (1973) - in which last can be found reprinted many of the papers cited above.

The initial detailed description and classification of Highlands languages was the work of Wurm, in a series of articles of increasing detail (1961a, 1961b, 1961c, 1961d, 1962, 1964a, 1964b, 1964c, 1965, 1971c); but there have been many modifications since these initial descriptions and the current situation is reported by Wurm in this volume (see 2.7.).

2.1.1.4.3. *ISLAND MELANESIA*

Island Melanesia - by which we mean the islands off Eastern New Guinea, and the island chains extending to Fiji, the New Hebrides, and New Caledonia - is taken separately from mainland New Guinea for two reasons: firstly, because most of the languages are AN, and the few known NAN languages all belong to a single phylum; and secondly, because it is necessary to deal with areas under varying administrations, and with varying linguistic histories.

In the south-east Papuan island area, there occurs only one NAN language: that of Yele (Yeletnye), on Rossel Island. An S.I.L. team is working

on it (Henderson 1975; the Hendersons 1975) and the language is interesting because of the unusual nature of its phonology (labio-velar articulation of nasals) already reported briefly by Ray (1907, 1929). The only other data on Yele is a Rossel Island ethnography by Armstrong (1928), which contains very little linguistic information.

On New Britain, the identifying of languages in AN or NAN has been subject to dispute until very recently; Chowning (1968) summarises the areas of disagreement, and rejects the possibility of languages that are not either AN or NAN ('Semi' AN - Loukotka (1962), Capell (1962b)). The NAN languages are Taulil (Laufer 1950; Futscher 1959), Butam (Laufer 1950), Baining and its probable dialects Makolkol and Gaktai (Rascher 1904; Bley 1906; Laufer 1946-49, the Parkers 1974), Sulka (Müller, H. 1916; Schneider 1962; Laufer 1955), Kol (Kole) (O'Neill 1961), Wasi (Ata, Peleata), and Anem (Karaiai). (See also Burger 1913.) Bileki, shown as NAN on a map by Capell (1962a), is established by Chowning as AN. The languages of the Cape Hoskins area (all AN with the exception of Kol) were surveyed by Allen and Hurd (1963). Some additional information on Baining and Sulka can also be found in Parkinson (1907) and Schmidt (1904, 1905), and further unpublished wordlists in various languages exist in the possession of various linguists (e.g. Capell, Wurm); but much more work obviously needs to be done on them. The same applies to New Ireland - where, however, only one[8] NAN language occurs. This is Kuot, according to the survey of Lithgow and Claassen (1968) and Beaumont (1972); older literature refers to it by the name of one of the villages, Panaras. First listed by Friederici (1921), the affiliations of the language remained obscure until 1972, when it was classified by Wurm (1972a; Wurm and Laycock 1974) as a stock-level isolate in the East Papuan Phylum. There are still no published data, except a few kinship terms in Chinnery (1930).

The greatest concentration of NAN languages outside New Guinea proper is found on the island of Bougainville - administratively part of Papua New Guinea, but geographically part of the Solomon Islands chain. The existence of a Bougainville Phylum (now the West and East Bougainville Stocks) was first postulated by Allen and Hurd (1965), although the existence of a number of NAN languages in south Bougainville, and their general relationship to each other, had been known since the times of German administration (Schmidt 1909). Published material on the languages includes Grisward 1910, Wheeler 1911, Thurnwald 1912, 1936a, 1942, Laycock 1969a, 1969c, 1969e, 1972b, 1972c, Griffin 1970, on Buin (Rugara, Telei); Rausch 1912, C. and P. Hurd 1966, 1970 on Nasioi; Müller 1954 on Konua (Kunua); and I. Firchow 1970, 1971, I. and J. Firchow 1969, the Firchows and Akoitai 1973 on Rotokas. S.I.L. teams are working in Buin, Nasioi, Nagovisi, and Rotokas, and have published - in addition to the above-

mentioned linguistic papers - preliminary literacy materials in these languages. Laycock has in preparation an extensive Buin dictionary, based partly on materials of the anthropologist R. Thurnwald, which will probably appear in 1976; a number of other works on Buin have already appeared (Laycock 1969a, 1969c, 1969e, 1972b, 1972c, 1975d). Perhaps here is also the place to point out a) that there is no evidence to suggest that Nasioi is tonal, as claimed by Rausch (1912) and followed by Wurm (1954b) and b) that Rotokas has appeared in the *Guinness Book of Records* as having the worlds smallest phoneme inventory - only /p t k b ř g a e i o u/ (I. and J. Firchow 1969).

Further south, in the Solomon Islands proper, the NAN languages have been largely overshadowed by the surrounding AN languages - with which they were early confused, by e.g. Codrington (1885), writing on Savosavo - and some appear to be extinct. The first survey of them was that by Ray (1928), and there is early material on Baniata (Waterhouse 1927) and Kazukuru (Waterhouse and Ray 1931); Capell (1969b) adds additional data, and compares Bilua, Baniata (Bañata), Lavukáleve (Laumbe), and Savosavo. Lanyon-Orgill (1953) adds the names Gulili (Galiguli, Guliguli) and Dororo, but no details. G.B. Milner has worked on Bilua, but has not published his data; Laycock also has a short vocabulary of Bilua from the fieldnotes of R. Thurnwald, which has not yet been analysed, as well as a vocabulary and grammatical indications on Baniata, from the fieldnotes of H. Scheffler. More recently, Evelyn Todd has carried out anthropological fieldwork on Savo, and has materials on Savosavo, Baniata, Bilua, and Lavukáleve (see 2.13.2. in this volume), some of which is intended for publication in the future.

The last-known NAN languages in this chain are those of the Santa Cruz Islands. They are so heavily overlaid with AN that they have often been classified as AN - for discussion, see Capell (1962b), Davenport (1962) - by, among others, Wurm (1963); but in a recent series of articles (1967, 1969, 1970b, 1972d) Wurm has presented evidence that the languages are basically NAN, and related to all other languages mentioned in this section, as part of the East Papuan Phylum (Wurm 1972a, 1977; Wurm and Laycock 1974).

No further NAN languages are known in Melanesia, but the possibility of a Papuan substratum has been mooted to account for supposedly 'aberrant' AN languages in the New Hebrides, the Loyalty Islands, and New Caledonia - mainly with reference to Nengone (Loyalty Is.) and Ambrym (New Hebrides). Evidence of such a substratum is at present lacking, but it is not beyond the bounds of credibility.

2.1.1.5. THEMES IN PAPUAN LINGUISTIC RESEARCH

2.1.1.5.1. *CLASSIFICATION*

Inevitably, the question of the genetic classification of the NAN languages of the New Guinea area, both internal (subgrouping) and external (relationship with languages outside the area) has been a major preoccupation of all writers of Papuan languages. Early attempts at classification were naive, and the NAN languages of New Guinea have been at times said to be related not only to AN languages, but also to Australian, and Tasmanian (by e.g. Latham 1847, 1860), and to Dravidian, Semitic, Bushman, and even Indo-European - possibilities which seem plausible only if we accept the ultimate relatability of all human languages (as does e.g. Trombetti 1905, 1927). To date, it can safely be said that there is no real evidence to link the NAN languages of New Guinea with any other linguistic group, though some slight indications of possibilities are discussed elsewhere in this volume (see 2.16.). In particular, Greenberg's 'Indo-Pacific hypothesis' (1971), which would interrelate 'the bulk of non-Austronesian languages of Oceania from the Andaman Islands on the west in the Bay of Bengal to Tasmania in the southeast' is not only far from proven, but also based on inadequate and insufficiently-analysed data (for example, comparisons are too frequently made only of items within large groups of languages - such as the Trans-New Guinea Phylum - that are already known to be related, so that there is little support for the wider relationships postulated).

Other attempts at classification can be divided into those by researchers (such as Ray, Capell, Friederici) with extensive personal experience of the New Guinea area, and those (such as Schmidt, Kluge, Loukotka, Salzner, Kieckers, Grace and the Voegelins) who based their conclusions (often with astonishing success, more often unsuccessfully) mainly on printed sources, or on material supplied by collectors in the field. Without exception, the classifications of writers in the latter category are rendered invalid by the random, and often inadequate, nature of the data available to them; they are also now extremely dated - even the latest of them, Voegelins (1965) and Grace (1968) - and as such are of value only as guides to the older literature. (The recent review by Leont'ev constitutes an exception.) The extensive work of W. Schmidt - bibliography by Bornemann (1954) - is assessed by Burgmann (1954), and also by Z'graggen in (III) 7.9.8.

On the other hand, the views of the researchers in the first category retain much of their validity - although even there, with notable exceptions, the material on AN languages remains more useful than that on NAN languages. A major exception is the work of A. Capell, whose personal experience of languages of the entire Oceanic and Australian area excels

that of any other linguist; nevertheless, even his most recent surveys of the New Guinea language scene (1962a, 1969a) were published before the detailed area surveys mentioned in previous sections, and must be read with this fact in mind. Capell's greatest achievement will, I believe, be seen to be in the areas of Australian and AN linguistics rather than in NAN linguistics - though there is no doubt of the value of his contribution there also. (For an assessment of Capell's work as a linguist, with full bibliography, see Wurm 1970a.)

In recent years the most far-reaching classifications of NAN languages have been undertaken by Wurm in a large number of publications (see particularly Wurm 1972a, 1977, and his contributions to the present volume) which draw upon his own researches, and those of the other investigators mentioned in this paper. It is still too early to assess the validity of his classifications, although they are in the main accepted by most Papuan linguistic specialists in the 1970's. With Wurm's publications, it became clear that lexical comparisons alone were insufficient to establish large-scale groupings, so that later classifications have in addition to lexical comparisons, been based also on highly-stable features such as verb morphology and overall typological features. It is still a moot question whether the classifications so obtained are truly 'genetic', or whether they represent the expansion of certain language types to the extent of obscuring the original languages spoken by some populations (languages which may still show their presence by substratum features).

The determination of such substratum elements will eventually emerge when detailed reconstructions of individual groups are undertaken; then it will be possible to say that we have a genuine 'Papuan comparative linguistics', as foreshadowed by Cowan (1955a, 1955b, 1957). The first steps in this direction have, for instance, been taken by A. Healey (1964a, 1970), Bee (1965a), McElhanon and Voorhoeve (1970), Franklin (see 2.4.2.), Kerr (see 2.4.3.) and Wurm (1976b, see also 2.4.1. in this volume), and this trend can be expected to continue. The relatively unsatisfactory nature of classification based solely on lexicostatistics has been pointed out by McElhanon (1970g, 1971) and the lists used have been criticised by Laycock (1970b). Other strategies are bound to develop; one promising area is the investigation of cultural loans in a large number of languages by Dutton (1973b).

Two additional themes in Papuan linguistic classification may be mentioned briefly here. One is the search for 'pygmy languages', as being in some way fundamentally different from other Papuan languages, as evidenced in papers by Aufenanger (1959), Gusinde (1958, 1959), Kirschbaum (1927), Meyer (1875), and Schmidt, W. (1914, 1945). This is now a dead issue; the languages spoken by short-statured peoples in New Guinea have

all been shown to be related to languages of their taller neighbours (though there may still be a distinct substratum in some, such as the Angan (Kukukuku) languages) - so that, whether pygmyism is a local variation, or evidence of a distinct racial stock, nothing can be deduced from the languages of pygmy groups as such.

The second theme is that of numeral systems, discussed by a number of writers (Galis 1960; Aufenanger 1938, 1959; Kirschbaum 1938; Schmidt, W. 1929; and - especially - Kluge 1938, 1941). Papuan languages show a wide variety of numeral systems (tabulated and discussed by Laycock in section 2.3.4.) but it is now realised that comparison of such systems does not lead far in the classification of Papuan languages, as closely related languages often have quite different systems, as a result of either divergent development or interlinguistic borrowings.

Two fringe publications must also be mentioned. Butinov (1962) attempts to reduce the number of languages in New Guinea on the basis of *a priori* probability; but the existence of approximately a thousand languages in the New Guinea area is now so well established that his work can be safely ignored. Similarly, an unfinished study by Dupeyrat (1962-65), based mainly on racial and cultural (rather than linguistic) features, does not tally with current linguistic knowledge, and remains of doubtful value until the discrepancies can be solved.

2.1.1.5.2. *HISTORY AND PREHISTORY*

Genetic classification necessarily implies a belief in a historical sequence, but this belief is not always explicit. However, the classificatory works of Wurm have usually contained statements on migrations implied by the classification (e.g. 1972a), and other works by him (1967, 1972b, 1976a) deal more explicitly with migrations and ancient linguistic contacts. Laycock (1965a) provides evidence of a northward migration of the Abelam and Boiken from the Sepik River, and (1973) conveys - much more tentatively - views on large-scale migrations within the Sepik region. A recent Sepik migration is reported by Staalsen (1965). Migration problems are touched upon by Voorhoeve (1969). A work that combines history and prehistory, with very detailed analyses, is Dutton's monograph on the peopling of Central Papua (1969b). But modern authors are far more cautious in their suggestions of migrations than those in the first half of the period we are studying; their main concern was the migration of speakers of AN languages, but speakers of NAN languages are also taken into account (in e.g. Friederici 1913). The relatively recent, and explicitly historical, work of Schmitz (1960a) creates more problems than it attempts to solve, in that it is out of touch with linguistic research

in the Morobe area, and does not tally well with current linguistic classification; nevertheless, it provides a great deal of information which could well be re-evaluated at this stage.

2.1.1.5.3. *APPLIED LINGUISTICS*

The establishment of the Summer Institute of Linguistics (S.I.L.) in Papua New Guinea (see accounts by Dean (1960), Hooley (1968), Pence (1962b), and Franklin in (III) 7.9.2.) has meant not only an increase in the data available on individual languages, but also an increase of interest in all areas of applied linguistics. Because of their commitment to Bible translation, S.I.L. workers have been actively engaged in the preparation of literacy materials (for which see the various S.I.L. bibliographies: Gammon (1969a, 1969b), Healey (1973a, 1973b), Messer (1966), and Wares (1968, 1971a, 1971b, 1972, 1974)), in issues of vernacular education (e.g. Gwyther-Jones 1971, Scott 1968b), and in questions of translation (e.g. Deibler 1966, 1968; Frantz 1964; Healey 1970a; Richert 1965a, 1965b; Shaw 1972b). Lexicography has begun to attract attention, in papers by Irwin (1970), Newell (1970), and Kilham (1971) - the last paper drawing more on Australian language experience than on New Guinea, but with comments which are equally applicable. Non-S.I.L. writings on lexicography (and related semantic studies) include Lang, A. (1971, 1973, 1975), Laycock (1975b), and Pawley (1970). S.I.L. writers have also added to the efficiency of linguistic research in a number of publications aimed at improving the linguist's eliciting and data handling ability (e.g. Bee (1961a), Bee and Pence (1962), Pence (1962), Healey (1964b), Franklin (1971b), and Loving (1961)). To these we may add a non-S.I.L. contribution by Laycock (1970b).

The interest of the newly self-governing Papua New Guinea administration in vernacular education is likely to mean an increase in activity in the sphere of applied linguistics, by linguists both within and without the Summer Institute of Linguistics.

2.1.1.5.4. *SOCIOLINGUISTICS AND ALLIED FIELDS*

Linguistics in the New Guinea area has always been closely associated with anthropology, and, as has been seen above, many linguistic contributions have been made by anthropologists; however, until recently relatively few linguists have shown an interest in relating their linguistic studies to anthropological and social issues. Important exceptions are papers relating to social organisation by Franklin (1965b, 1967b) and McElhanon (1968, 1969), and on myth by Scorza (1972) and Shaw (1972b). The analysis of semantic domains is relevant to lexicographers and others,

and some papers have appeared on this: Franklin 1971c, Lang, A. 1971, Bulmer 1968, Newell 1970, Pawley 1970, and, indirectly, Laycock 1970a, 1970b. The questions of bi- and multi-lingualism have been discussed briefly by Schlesier (1961), Salisbury (1962), Lewis (1971), and Laycock (1966), and extensively by Sankoff (1968, 1972); other forms of language contact, specifically that between AN and NAN languages, have been treated by Capell (1973), Dutton (1971b), and Laycock (1974). Some mention of the influence of European languages on indigenous languages can be found in Phillips 1973 and Laycock 1971b. Various levels of linguistic usage - ritual, poetry, baby-talk, secret languages - have hardly been dealt with at all for the New Guinea area, but there are a few brief treatments: Franklin 1973d, 1973e, Thurnwald 1936a, 1942, Laycock 1969a, Aufenanger 1962, Aufinger 1942-45, and Dempwolff 1909 - the last two works dealing with AN languages. Other areas related to linguistics - e.g. psycho-linguistics - are unrepresented in the literature, though perhaps we should mention here a number of publications exemplifying a linguistic approach to ethnomusicology: Chenoweth 1966, 1968, 1969, 1972; Chenoweth and Bee 1968, 1971; James 1968 - and, for 'drum languages', Zemp and Kaufmann (1969).

It can be seen from the paucity of references, and from the paper on sociolinguistics in the New Guinea area by Taylor (1968), that socio-linguistics is virtually in its infancy in New Guinea, although it can be confidently predicted that interest in it will increase.

2.1.1.6. CONCLUSION

Most of the previous hundred years of Papuan linguistic research can be regarded as the slow fuse to a rocket which is only now, in the 1970's, beginning to take off. It is likely that the publications of the next decade will make all writings before about 1960 obsolete, except for historical documentation; the interest will be in the ascent of the rocket, and the direction in which it is going. And the flight of the rocket may well be watched by linguists whose areas of specialty are far from New Guinea - for, after all, one-seventh[9] of the languages of the world can hardly be ignored.

NOTES

1. The true author of the book is not fully established, although Souter (1973), who devotes a few pages to this remarkable work, makes out a plausible case for it being written by a retired Royal Navy Lieutenant, Robert H. Armit, who tried - unsuccessfully - to go to New Guinea as the commander of a largely non-existent expeditionary force called 'The Royal New Guinea Volunteers'.

2. The first European to set foot on New Guinea soil seems to have been a Portuguese governor of the Moluccas, Jorge de Meneses, in 1526. He called it 'Ilhas dos Papuas' (Malay **pĕpuah** *frizzy-haired*); the name New Guinea ('Nueva Guinea') was given to the island in 1545 by Ynigo Ortiz de Retes (Souter 1963).

3. One typical early wordlist is that of the language spoken on one of the islands of the Kumamba group (probably Liki), recorded during the 1616 voyage of Le Maire and Schouten (wordlist in Dalrymple 1771, Meyer 1874, and Laycock 1972a).

4. Unfortunately, in the collected works, all papers have been translated into Russian, even though the majority of them were originally published in German or English. Although the collected works provide a complete list of Miklukho-Maklaĭ's words, a possibly more accessible list will be found in Fischer (1955), and a German translation of the diaries is also available (Miklukho-Maklaĭ, n.d.).

5. The history of the concept 'Papuan', as opposed to 'Melanesian', is surveyed by Schlesier (1970); race, geography, and language have all been confused under the term, but for the last few decades linguists at least have tended to agree that it is a convenient, if still occasionally

ambiguous, shorthand term for 'Non-Austronesian [languages] of the New Guinea area' - and as such it is used in this paper.

6. For example, Kirschbaum's (1935) eliciting pad for New Guinea languages contains perhaps the greatest number of items of any published New Guinea wordlist (1,085 numbered entries, including multi-clause sentences), and provides good instructions on the eliciting of kinship terms (272 items, or double that number when elicited, as instructed, as terms of address and reference).

7. W. Schmidt, in Klaffl and Vormann (1905), postulated the relationship of Monumbo to Valman, near Aitape - a conclusion which shows considerable linguistic insight, as the languages are not closely related, and belong to quite distinct stocks within the Torricelli Phylum. The suggestion was ignored by later researchers (after all, so many suggestions of relationship made by early workers had turned out to be totally wrong), and the relationship was forgotten until confirmed, independently, by Laycock (1968).

8. Capell (1967) discusses the possibility of a NAN language of New Ireland also named Butam; but here Friederici (1912) appears to be in error.

9. Taking the NAN languages of the New Guinea area to be about 750, and the number of world languages to be about 5,000. If the AN languages for all of Melanesia are added, we reach a total of about one-quarter of the world's languages (Laycock 1969d).

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2.1.2. A HUNDRED YEARS OF PAPUAN LINGUISTIC RESEARCH: WESTERN NEW GUINEA AREA

C.L. Voorhoeve

2.1.2.1. GENERAL REMARKS

The label 'Western New Guinea Area' is used here to cover the mainland of West New Guinea (Irian Jaya) and adjacent islands as well as the islands of Halmahera, Timor, Alor, and Pantar in eastern Indonesia, on which Papuan languages are known to be spoken. Till after the second world war the area formed part of the Dutch East Indies; it now is part of the Republik Indonesia.

As in the Eastern New Guinea Area, the modest beginnings of research in Papuan languages were the short vocabularies compiled by occasional travellers and explorers who visited the area. As mentioned in 2.1.1.3., they date back to 1828, when Modera collected a wordlist in the Kamoro language on the south coast of West New Guinea (Modera 1830). Actual research however was not begun before the last quarter of the nineteenth century, when missionaries established themselves in areas where Papuan languages were spoken; first of all in Halmahera, and in the early twentieth century also on the mainland of West New Guinea. Up to the early fifties, the output of missionary research was almost the sole source of information on Papuan languages. It consisted of grammars of various sizes, texts, dictionaries and religious literature. These works were generally based on a sound practical knowledge of the languages studied, but lacked in linguistic sophistication, since none of the early missionaries had received formal training in general linguistics. The Dutch linguists Adriani and Kern paid only passing attention to Papuan languages, and only Van der Veen's comparative study of the North Halmaheran languages (Van der Veen 1915) stands out as a work of importance.

The dawn of modern linguistic research in the area began with Capell's survey of the languages of Timor (1944), in which he showed that a number

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of non-Austronesian (Papuan) languages are spoken on the island. Shortly after the interruption of all research by the second world war, American missionaries trained in linguistic fieldwork by the Summer Institute of Linguistics (S.I.L.) began working in West New Guinea. Their work is centered in the Central Highlands. Foremost among them are M. Bromley, G.F. and M.O. Larson, and J. Ellenberger.

Research along modern lines by Dutch linguists began in the early fifties with the work of Cowan, Anceaux, and the missionary-linguist Van der Stap. They were joined by Voorhoeve in 1960. However, linguistic research in West New Guinea received a severe setback when the territory became part of the Republik Indonesia in 1962. Only missionary-linguists could carry on with their work, and in the difficult years following the change in political status, very few results of their work reached the outside world. It was almost impossible for researchers to enter the territory, and any work by outside linguists had to rely on older sources and on the little information obtainable from West New Guineans who had crossed the border into Papua New Guinea. Such work, mainly of a comparative and classificatory nature, was carried on by some linguists of the Australian National University (Wurm, Laycock, Voorhoeve), by Anceaux (Leiden University), Healey (Summer Institute of Linguistics) and Greenberg (Columbia University and Stanford University).

During the last few years, however, prospects of linguistic research in the area have become brighter. In 1973 the first team of linguists of the S.I.L. began their work at Lake Holmes in the middle Mamberamo area, and there is hope that under the sponsorship of the University of Cenderawasih in Jayapura linguists will again be allowed to conduct field work in West New Guinea.

2.1.2.2. LINGUISTIC RESEARCH IN DETAIL

2.1.2.2.1. *EASTERN INDONESIA*

In Eastern Indonesia, non-Austronesian languages are known to be spoken in North Halmahera, and on the islands of Timor, Kisar, Alor, and Pantar. The languages of North Halmahera (Galela, Tobèlo, Loda, Ibu, Sahu (Waioli),[1] Modole, Tabaru, Pagu, Ternate, Tidore) have mainly been studied by the missionaries of the Utrechtsche Zendings-Vereniging, who started their work on the island in 1865. In addition to mission literature[2] they produced wordlists of Galela (Baarda 1895), Tobèlo (Roest 1905), Pagu and Modole (Ellen 1916a,b), Tabaru, Waioli, Ibu, Galela, Loda, and Ternate (Fortgens 1905, 1917); a Tobèlo-Dutch dictionary (Hueting 1908c, 1935); a grammatical sketch and a manual of Galela (Baarda 1891, 1908); a grammatical sketch of Tabaru (Fortgens 1928) and Tobèlo (Hueting 1936); a

comparative study in Loda and Galela grammar (Baarda 1904) and texts in Galela (Dijken and Baarda 1895), Tobèlo (Hueting 1908b), Pagu and Modole (Ellen 1916c,d) and Tabaru (Fortgens 1928). Hueting (1908a) gave a survey of the North Halmaheran languages together with comparative vocabularies. It was later corrected and supplemented by Adriani (1912:300), who probably also is the author of the survey of North Halmaheran languages given in the *Encyclopaedie van Nederlandsch-Indië* (Adriani? 1918).

Further have to be mentioned the history of Ternate, written in the Ternate language (Van der Crab 1878), the Ternate wordlist, texts, and a few grammatical notes by de Clercq (1890), the notes on Galela grammar by Kern (1891), and an article on word taboo in Galela (Kern 1893). The distinct character of the North Halmaheran languages was noticed as early as 1872 by Robidé van der Aa. W. Schmidt (1900-01) put forth the hypothesis that they belonged in one group together with the Papuan languages, and Van der Veen (1915) clearly demonstrated in his thesis their non-Austronesian character. Finally, Cowan (1958a) confirmed Schmidt's hypothesis and included them in his West Papuan Phylum. At present, the position of the North Halmaheran languages *vis-à-vis* the other Papuan languages is again under scrutiny by Capell (see 2.10.1. in this volume). Van der Veen's study was the last extensive work done in these languages; unfortunately it has not been followed up by more up-to-date linguistic research.

The Papuan languages of Timor were recognized as such by Capell (1944). They are: Bunak (Buna?), Makasai, Waimaha, Dagodá (Fataluku), Kairui, and (see 2.10.1.) Lovaea. Capell gave a grammatical outline of Bunak and Makasai, and comparative wordlists of the Austronesian and non-Austronesian languages of Timor. In Capell 1972, he provided information on Fataluku and an additional language, Lovaea. Bunak has been the subject of further study by Berthe (1959, 1963), who considered it a 'mixed' language. Cowan (1963) refuted this and argued for a link with the West Papuan Phylum. Kemak, a Timorese language which Capell had reported to be related to Bunak has been shown to be Austronesian (Stevens 1967).

Oirata, the language of Kisar, a small island near the east coast of Timor, has been described by de Josselin de Jong (1937) who published texts, phonetical notes, a grammatical sketch, and a vocabulary. Capell (1944) found it clearly related to Makasai and Cowan (1965b) demonstrated that both languages appear to belong to the West Papuan Phylum.

Only recently it became known that also on the islands Pantar and Alor non-Austronesian languages are spoken. Wordlists of two languages on Alor, viz. Kui and Kolana, had been published in the *Tijdschrift Koninklijk Aardrijkskundig Genootschap*, Vol.31 (1914), and a wordlist and texts in the Abui language, also on Alor, had been published by Nicolspeyer

(1940). But only in 1973 it was pointed out in an article by Watuseke and Anceaux that these languages as well as the language on the east coast of Pantar were probably non-Austronesian.

This was affirmed in 1975 by W. Stokhof who published a survey and wordlists of all the languages in the Pantar-Alor area. It appears that only one Austronesian language, Alor, is spoken on the two islands. The remaining twelve languages are all non-Austronesian. They are clearly related to each other and have been grouped into one family. The most recent linguistic fieldwork done in the area is a study of the Woisika language on Alor by W. Stokhof and a study of the Blagar language on Pantar by H. Steinhauer. The publication of the results of their research can be expected in the near future.

The linguistic position of the non-Austronesian languages of Timor, Alor, and Pantar within the whole group of non-Austronesian (Papuan) languages has been the subject of further study by Capell (see chapter 2.10.1. in this volume).

2.1.2.2.2. *WEST NEW GUINEA AND ADJACENT ISLANDS*

The history of linguistic research in the Papuan languages of Irian Jaya will be described here in three sections, each dealing with a separate geographical area:

a) West and North Irian Jaya, where until the early sixties linguistic research was carried out almost exclusively by non-missionaries: explorers, anthropologists, and Dutch linguists.

b) The Central Highlands, where after the first attempts by early explorers, language study was undertaken solely by the Protestant and Roman Catholic Missions.

c) South Irian Jaya, where linguistic history was almost exclusively the work of the missionaries of the Sacred Heart.

2.1.2.2.2.1. West and North Irian Jaya

The western and northern parts of Irian Jaya are linguistically the least known areas of West New Guinea. Even today information on most languages is very poor and only two languages, Sentani and Nimboran, are relatively well known.

Prior to the second world war, only a few data had become available. There were a number of short wordlists of limited value (Meyer 1874: Arfak [Hattam]; Miklukho-Maklaĭ 1876: Mairasi; Rosenberg 1878: Karufa [Asienara]; Laglaize 1879: Karon; Robidé van der Aa 1879: Kapaur [Iha], Karas; *idem* 1885: Pauwi; Bink 1902: Sentani; Moolenburgh 1904: Seka [Sko];

idem 1906: Sentani; Sande 1907: Sentani, Manikion; Anonymous 1913: Pauwi, Koassa [now Kwerba], Borumessu, Sidjuai, Tori, Südfluss; Le Roux 1926: Kaowerawej [now Kwerba]) and a few wordlists with additional grammatical notes and/or illustrative sentences (Wirz 1922: Sentani, 1923: Mansibaber [now Meax]; Cocq d'Armandville 1903: Kapaur [Iha];[3] Schneider 1926: Nimboran).

Ray (1912a) used a number of these lists for his preliminary classification of the languages in Dutch New Guinea in 'Papuan' ("non-Malayo-Polynesian") and 'Indonesian' languages. On the basis of his data he classified the Kapaur and Karufa languages erroneously as Indonesian.

It was only several years after the second world war that linguistic research of any importance got under way, and to a great extent it was the work of two Dutch linguists, H.K.J. Cowan and J.C. Anceaux.

Cowan was not a linguist by profession. He occupied a top position in the public service of Netherlands New Guinea, but he had a keen interest in linguistics and was very well read in the subject. In his early publications he paid attention to the criteria distinguishing the Melanesian from the Indonesian languages (1949, 1951) and determined the border between Papuan and Austronesian languages in the north of West New Guinea (1952b). In the meantime he had begun the study of the Sentani language, publishing texts (1950, 1952a), grammatical notes (1951-52) and much later a grammar with texts and a lexicon (1965a). He discovered the first tonal language in West New Guinea (1952c) and wrote articles on various subjects of theoretical and practical importance (1953b, 1954a,b; 1958b, 1959a,b). His main work however was to become the classification of the Papuan languages. In 1950 the Bureau of Native Affairs in Hollandia (now Jayapura) had sent out a wordlist of 350 items, including some possessive constructions, to be filled out in the vernaculars with the help of government officers and teachers in all the areas then under government control. The materials obtained in this way were used by Cowan in his classificatory work. The first result was a survey covering the then known languages of north and west West New Guinea (1953a), in which he presented whatever grammatical information was available in those languages. Then followed the establishment, by means of a lexicostatistical analysis of the data, of a group of related languages in the Bird's Head, which, he pointed out, seemed to be related to the non-Austronesian languages on North Halmahera (1957a). In the same year he proved that genetic relationships existed between the so-called Tami languages near the border with Papua New Guinea, the languages of the Tor river area in the central north, and the Demta, Sentani and Nimboran languages in between. This group he named the North Papuan Phylum (1957b). The next year he extended the western group to include all the languages of the

Bird's Head and those of North Halmahera, and labelled it the West Papuan Phylum (1958a). Later, he added several languages of the Bomberai Peninsula to this Phylum, as well as the Mantembu [now Yava] language on Yapen Island (1960). As mentioned above (see 2.1.2.2.1.), Cowan finally argued for the inclusion of the far-away non-Austronesian languages of Timor and Kisar in the West Papuan Phylum (1963, 1965b).

Anceaux, who received his linguistic training at Leiden University, began his work in New Guinea about 1955. His main work was in the Nimboran language, resulting in a detailed phonology and morphology (1965). He did a survey of the languages of the Bomberai Peninsula (1958) and of the islands Yapen, Kurudu, Nau, and Miosnum north of the Geelvink Bay (1961). The last publication deals mainly with the Austronesian languages of the area, but contains some notes (though no actual language materials) on the Yava language of Yapen. From his pen further appeared a useful bibliographical survey of the linguistic literature on West New Guinea (1953a) and an outline of the various theories concerning the linguistic position of New Guinea (1953b).

Apart from the work of Cowan and Anceaux very few new data became available in this period. As a by-product of anthropological research there appeared a wordlist of the language of the Tori Aikwakai in the Lake Plain (Feuilletau de Bruyn 1952), a few grammatical notes on the Mejbrat [now Brat] language in the Bird's Head (Elmberg 1955), short comparative wordlists in the Tor river languages (Oosterwal 1961), and a wordlist, sentences and some paradigms in the Kaowerawej language (van Eechoud 1962), material which had been collected already in 1940. Galis (1955) published a survey of languages and dialects of West New Guinea containing short wordlists.

During the last ten years, research in the languages of west and north West New Guinea was mainly carried out by linguists of the Australian National University. Voorhoeve (1969) established the existence of a genetic relationship between Sentani and the Asmat language in the south, and argued that this relationship was closer than the genetic relationship between Sentani and the other members of Cowan's North Papuan Phylum. He also carried out a survey of the languages near the Papua New Guinean border, and presented additional support for the genetic relationship between the Tami and Tor languages (1971). During the last few years he worked, in collaboration with Anceaux, on a reappraisal of the language classification in the area, the results of which are presented in chapters 2.6.2., 2.10.2., 2.14.3. and 2.15.2. of this volume. Working from the Sepik District, Papua New Guinea, Laycock collected wordlists in two hitherto unknown languages west of the border, Pyu and Biksi, published in a report on Australian National University activities in Irian Jaya

(1972). In a recent survey of the Sepik languages (1973) he also covered the languages immediately west of the international border, supplementing and correcting Voorhoeve's 1970 survey.

At present, the Summer Institute of Linguistics has begun working in the Mamberamo River area, and Protestant Missions have moved into the western part of the Lake Plain. It can be expected therefore that before long the first reliable language data from these areas will become available.

2.1.2.2.2.2. The Central Highlands

The Central Highlands were the last area of West New Guinea to be opened up. From 1910 onwards several military and scientific expeditions penetrated into parts of it; they collected wordlists in several languages on the fringes of the Highlands but only part of these became accessible to the public. They were the lists in Jabi, Simori, Wolani, Ekari, Moni, Dem, Uhunduni, Enggipilu, Uringup, Dani, Sauweri-Hablifuri, Pesechem, and Goliath, brought together and published by Le Roux in his great work on the Mountain Papuans (Le Roux 1950:809-913).[4] Before 1940 the only linguistic work exceeding the collection of words and occasionally sentences was done by Wirz who published a wordlist and grammatical notes on the Dani language spoken in the Swart valley (1924).

The situation changed when in 1939 the Roman Catholic Mission and the Christian and Missionary Alliance (CAMA) established themselves in the then one-year old patrol post at Enarotali, Wissel Lakes, and took up the study of the local languages.

In 1940, the Dutch Roman Catholic missionary, P. Drabbe, collected grammatical notes in the Ekagi (Kapauku) and Moni languages. Their publication however had to wait until after the war (Drabbe 1949b). At the beginning of the war, the newly established mission stations were abandoned and linguistic research was not taken up again until the late forties. On the Roman Catholic side, Drabbe then resumed his study of the Ekagi and Moni languages, publishing a grammar of Ekagi in 1952, and a grammar of Moni in 1959 (Drabbe 1959a). His Ekagi grammar was later corrected on several points by the pedagogical grammar of Kapauku (Ekagi) by Steltenpool and Van der Stap (1959). Van der Stap had studied linguistics at Leiden University; his only other published work to date is his Leiden Ph.D. thesis, entitled *An outline of Dani morphology* (1966). The remainder of the results of his linguistic work is still in manuscript form. It includes grammars of Moni and Amung-kal (Uhunduni), a grammatical sketch of Western Dani, an extensive Amung-kal-Dutch/Dutch-Amung-kal wordlist, a Moni-Dutch/Dutch-Moni dictionary, and a Dani-Dutch/Dutch-Dani dictionary.

The first published work from the CAMA side is an article on transliteration in Kapauku (i.e. Ekagi) by Marion L. Doble (1950). Much later, she published a small Kapauku-Malayan-English-Dutch dictionary (1960), and essays on Kapauku grammar (1962). In 1953, Gordon F. Larson and Mildred O. Larson (CAMA), both trained linguists, began their language study among the Moni and Wodani (Wolani) groups, and in 1956 they also started work among the Western Dani in the Ilaga valley. Only a small part of the output of their work has been published to date, i.e. 'Preliminary studies in the Moni language' (Larson and Larson 1958a), and a comparative study of the Ekagi, Wodani, and Moni languages (Larson and Larson 1972). Their unpublished work includes: two glottochronological studies (G.F. Larson), a dialect study (Larson and Larson), a Moni dictionary (Larson and Larson), and a paper on Moni phonology and morphology (Larson and Larson), and several studies of Western Dani. Other CAMA missionaries working in the languages of the same area are W.A. Cutts and J. Ellenberger, but no results of their work have been published.

In 1954 missionaries of the CAMA established the first mission post in the Baliem Valley. Following their arrival, other missions moved into the same general area: the Unevangelized Field Mission (UFM)(now Asia Pacific Christian Mission) into the upper Hablifuri and Wodo Valleys, and into the highlands east of the Baliem (Station: Naltja); the Regions Beyond Missionary Union (RBMU) also settled east of the Baliem (Stations: Ninia and Korappun), while the Australian Baptist Missionary Society (ABMS) and the Roman Catholic (R.C.) Mission again chose the Baliem Valley. All these missions are engaged in translation and literacy work, but scientific research has only been carried out by Myron Bromley (CAMA) and Van der Stap (mentioned above). Bromley's work centres in the Baliem Valley. His first publication was a comparative study of the phonological systems of eight Dani dialects (1961); this was followed by a lexicostatistical classification of the Dani languages (1967), and recently by his Ph.D. thesis entitled *The Grammar of Lower Grand Valley Dani in Discourse Perspective* (1972). In his lexicostatistical study of 1967, Bromley established the Central Highland Phylum of languages, which includes the Dani Family, Uhunduni (Amung-kal), Dem, and the Wissel Lakes-Kemandoga group (Larson's Ekagi-Wodani Moni language family). He also established the Goliath Family of languages, east of the Dani Family. The Goliath Family was included in the Central and South New Guinea Phylum by Voorhoeve (1968). Research in the Goliath languages has not yet produced any published results.

East of the Goliath language family, the Roman Catholic Mission is working among the people of the Star Mountains who speak languages related to the Ok languages across the border and in South Irian Jaya. The only

data available from this area is a translation of the four Gospels in the language spoken near Apmisibil (R.C. Mission 1970).

2.1.2.2.2.3. South Irian Jaya

Linguistic exploration in the southern lowlands of Irian Jaya began at the extremities, first in the west and later in the east. The western Mimika coast which was easily accessible to visitors from Indonesia, yielded the earliest recorded data in a Papuan language in West New Guinea. In 1828 Modera and Müller, during a visit to Utanata, collected wordlists of what now is called the Kamoro language (Modera 1830, Müller 1857); in 1876 Miklukho-Maklaĭ published, amongst others, wordlists of Lakahia and Kiruru [now Kamoro]; in 1903, 1904, and 1905, members of expeditions of the Royal Dutch Geographical Society collected wordlists near Jamur lake (Anggadi, Nagramadu, Goreda) (Sande 1907) and on the Mimika and Kuperapukwa rivers (Seijne Kok 1908); another wordlist of the Mimika language was collected by Dumas (1911). It had not escaped the investigators that the collected lists belonged to related languages. Sidney Ray in his notes on languages in the East of Netherlands New Guinea (Ray 1912a), using these wordlists, wrote some comparative and grammatical notes on what he called the Angadi-Mimika group of languages. In these, he traced some sound correspondences, and presented a number of lexical correspondences. From their grammatical features he concluded that the languages were Papuan (i.e. "non-Malayo-Polynesian"). He further compared their vocabulary with words in the languages of the Merauke and Trans-Fly areas, noting some lexical similarities, and thereby gave the first hint of genetic relationships to be established much later by Voorhoeve (1968).

In the east, linguistic research began after the Dutch government in 1902 established the first patrol post south of the mountains on the Merauke River. From those first years date two lists of words and sentences in the Marind language (Bauer 1904, Seijne Kok 1906) and some grammatical notes on Marind by Adriani (1908) who on the basis of Seijne Kok's materials established the non-Austronesian character of Marind. A short wordlist of the Asmat language, halfway between the Marind and Mimika language areas, was published by Feuilletau de Bruyn (1913). In 1905 the missionaries of the Sacred Heart Mission settled in Merauke and at once took up the systematic study of the Marind language. The first solid result of their linguistic activities was the Dutch-Marind dictionary by J. van de Kolk and P. Vertenten published in 1922 (Kolk and Vertenten 1922). It was followed four years later by a Marind grammar (Geurtjens 1926) and in 1933 by a Marind-Dutch dictionary, also by Geurtjens. In the following years a little more became known of the

languages outside the Marind territory through the work of Nevermann who published ethnographies containing wordlists and some general information on the Kanum and Moraori (1939a), Sohur [now Yaqay] (1939b) and Je-nan [now Yey] (1942).

Until the end of the time-period discussed above, only Marind had been the subject of intensive study, but this was soon to change. In 1935 the Dutch missionary-linguist P. Drabbe arrived in the south, and stayed almost uninterruptedly in the area until 1960.

When Drabbe arrived in the eight year old Mission station at Kokonaw on the Mimika coast, he already had a long experience in research in the languages of the Tanimbar Islands in Eastern Indonesia. He had not been formally trained in linguistics, but he had a natural talent for, and a keen interest in, languages, and during the twenty years of his work on the Tanimbar Islands he had accumulated an invaluable amount of fieldwork experience.

In Kokenaw he began the study of the local language which he called the Kamoro language, and produced amongst others a Kamoro-Dutch dictionary and an extensive wordlist of the related Sempan language, which have not been published. All this work was done besides his normal duties as a missionary, but in 1939 the Mission allowed him to devote all his time to language work, and from that time on he produced an impressive array of first language descriptions. Starting with Kamoro folk-tales (1947-50) he published grammatical notes on the Kimaghama, Riantana, Ndom (1949a), on Yelmek, Maklew, and Mombum (1950b), and on Bian-Marind, Boazi, Yey, Moraori, and Kanum (1954); elementary grammars of Syiagha and Yenimu (1950a), and Yaqay (1954); grammars of Kamoro (1953), Kati (1954) and Gawir-Marind (1955); a grammar plus text of Aghu (1957) and Asmat (1959b), a dictionary of Asmat (1959c), texts with grammatical notes in Kaeti and Wambon (1959d), and a study of three Asmat dialects (1963). He added wordlists of approximately 400 items to all his grammatical studies except to his grammars of Asmat and Marind, for which languages separate dictionaries were available. To this output should be added his work on the Ekagi and Moni languages already mentioned in the previous section, an unpublished study of the Tamagario language and a large amount of religious literature in the languages studied, which he prepared for his Mission. Thus Drabbe provided the basic data in nearly all the languages between Etna Bay and the Papua New Guinean border. For many of these languages his work is still the only source available.

The only language description from a non-missionary source was made by Voorhoeve (Leiden University) who spent two years in the Asmat area and published a phonology, morphology and texts in the Flamingo Bay Dialect (1965).

As a result of the descriptive work, questions of language classification and typology began to attract the attention of those involved in the study of Papuan languages.

A first attempt to come to some sort of classification of the languages in South Irian Jaya was undertaken by Drabbe's confrère Boelaars, on the basis of Drabbe's field notes (1950). By comparing the languages with regard to a number of grammatical features he arrived at a broad typological classification into three groups: 1) The Frederik-Hendrik Island languages; 2) Yaqay, Marind, Boazi; 3) the remaining languages. Drabbe (1950b) set up a typological division into four groups of languages based on features of verb morphology, and in the course of his work recognized the existence of four groups of related languages: Kamoro-Sempan-Asmat (1953), Marind-Yaqay-Boazi (1955), Yelmek-Maklew (1955) and the Awyu languages (1959d). A first attempt at the internal classification of the Awyu languages was made by Voorhoeve (1968, see below), and carried a step further by Healey in his paper on Proto Awyu-Dumut phonology (1970). Earlier Healey had already shown that the Kati language east of the Awyu languages formed part of a family of languages which stretched across the border into Papua New Guinea (1964). He called this family the Ok Family, and mentioned the possibility that the Ok, Awyu and Asmat-Sempan-Kamoro languages were genetically related. This was confirmed by Voorhoeve (1968) who gave a first lexicostatistical classification of the languages of South Irian Jaya in a large group of related languages, named by him the Central and South New Guinea Phylum. This Phylum became part of the Trans-New Guinea Phylum in the revised and much extended classification of Papuan languages by McElhanon and Voorhoeve (1970).

In the revised classification the languages of South Irian Jaya are divided into five stocks: 1) Asmat-Sempan-Kamoro, the Awyu Family and the Ok Family; 2) Yaqay, Marind, and the Lake Murray Family; 3) Yelmek-Maklew; 4) the Frederik-Hendrik Island languages; 5) Yey, Kanum, and Moraori.

The Lake Murray Family, consisting of the Boazi and Zimakani languages, was established by Voorhoeve (1970). The greater part of the family is located in the Western District of Papua. Wurm (1971) further united Yey, Kanum and Moraori into one stock with the languages of the Trans-Fly area east of the Papua New Guinean border. In 1970, Voorhoeve visited the Asmat and Awyu areas and made a survey of the languages in the hinterland of the Casuarina Coast. As a result he established the Kayagar Family with three member languages, Kaugat, Kaigir, and Tamagario, and classified it as a one-family stock within the Trans-New Guinea Phylum. A fourth language, Sawuy, could be added to the Awyu-Dumut Family.

A comparative typological analysis of Kamoro and some East New Guinea languages was published by Holmer (1971). The study is now of limited value, being superseded by subsequent typological research (see below).

2.1.2.2.2.4. General Approaches

Finally, the West New Guinea area languages as a whole have been a part-subject of several broad classificatory and typological studies, viz. the typological survey of New Guinea languages by Capell (1969); Greenberg's wide-ranging classificatory study (1971); and the extensive research of S.A. Wurm into the classification, typology, and prehistory of the Papuan languages (1972, 1977). Details of their work have already been given by Laycock in the preceding chapter in the section Themes in Papuan Linguistic Research (see 2.1.1.5.1. and 2.1.1.5.1.2.) and will therefore not be repeated here.

Quite recently, Voorhoeve (1975) has made a re-assessment of the language situation in Irian Jaya.

N O T E S

1. Language names are given as in the respective quoted publications; if obsolete, they are followed by the current name in square brackets. Alternative names currently in use are put between round parentheses.

2. A survey of the mission literature published before 1915 can be found in Van der Veen 1915; bibliographical data on mission literature published after that date were not available to the author.

3. During the writing of this article, the manuscript of a grammatical sketch of Ihandin [Iha], written by the Dutch Roman Catholic Missionary J. Coenen in 1953 came into the possession of the author by courtesy of Father P. Van der Stap.

4. With the exception of a wordlist of the language of the Tapiro Pygmies [Ekagi] in Rawling 1913.

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P A R T 2.2.

LANGUAGE CLASSIFICATION

2.2.0. PAPUAN LANGUAGE CLASSIFICATION PROBLEMS

S.A. Wurm and K. McElhanon

2.2.1. INTRODUCTORY REMARKS

The discussions given below in the various chapters of Part 2.3. point out the strong influences exercised by Papuan languages upon each other. It is clear that these influences bear heavily on the question of the classification of these languages and, in particular, call into question the value of the lexicostatistical approach which, in many instances, has been the basic tool for the classification of Papuan languages until fairly recently. While the importance of this approach for an initial crude attempt at classifying previously unclassified languages is obvious, its usefulness in the Papuan linguistic field must be regarded as very severely limited because of the almost ubiquituous presence of varied influences of languages upon each other on virtually all levels which can reach a magnitude unrealised in the framework of the lexicostatistical method and in the basic principles of genetic linguistics in general. Basic vocabulary items of one language which according to the postulates of lexicostatistics, are "unborrowable", are often encountered as quite obvious loan words in another unrelated language. Similarly, pronouns, singly and in sets, are taken over by languages from other languages, and the structures of many languages have apparently undergone quite drastic changes under the influence of other, sometimes unrelated, languages. Phonologies can change extensively under such an influence, and the only apparently relatively stable and persistent items and features in Papuan languages are constituted by verbs as lexical items, some structural features of verbs and their underlying principles, principles underlying pronominal systems - but to a much lesser extent the pronouns themselves as lexical

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items - and semantic characteristics of the grouping of lexical items (e.g., *fire* and *tree* can, in one language, be different meanings of one lexical item, but in another, the meanings of two different lexical items: such principles are preserved in a particular language even if the lexical items themselves are borrowed into it from another language in which such items have semantic ranges which are completely different from those present in the borrowing language). In consequence, such items and features have considerable diagnostic importance in comparative and classificatory work. So for instance, there are several instances of languages, especially in the Sepik-Ramu Phylum, which show somewhat differing phonologies, relatively little cognation in nouns, and great differences in the form, but not the system, of their pronouns, but have many verbs in common, together with much of their verb morphology.

2.2.2. "MIXED" LANGUAGES

This is not the place to argue the case of "mixed languages" whose existence is strongly denied by many comparative linguists with the notable exception of A. Capell who has often been severely criticised for this (e.g. in the comments to Capell 1962), and of A. Pawley (1969), but in the light of Grace's (1965) statement that very little is known about language mixing, there seems to be considerable merit in Pawley's comments that the main reason for our continuing ignorance in this field is the fact that most linguists are reluctant to believe that extensively mixed languages might exist. This is of course largely attributable to the fact that the genetic model does not allow for mixed languages which therefore constitute an unacceptable concept as such. This is rather unfortunate because the New Guinea area may offer the probably best laboratory situations in the whole world for the study of language mixing: in several areas, two different, sometimes unrelated, languages are spoken in separate villages, whereas in villages with mixed populations hailing from the other villages, languages are spoken which appear to be "mixtures" of the two different languages. A thorough study of such languages by a comparative linguist and a sociolinguist would undoubtedly contribute materially to our knowledge of the nature of language mixing.

It must be pointed out in fairness, that most comparative and genetic linguists are prepared to admit that a certain amount of borrowing, or mixing, is present in all languages - apart from obvious loans on the lexical level - but they either appear to assume, at least by implication, that an inner core is present in every language

which is impervious to borrowing and which therefore constitutes the component which is relevant in a genetic classification of a language, (e.g. Hamp 1962), or they seem to feel that one component of a language is always dominant, even if borrowing or mixing on all levels of a language may be possible. This dominant element is in their view, the one which is drawn upon in a genetic classification of such a language, and it represents that particular language in such an exercise.

Pawley (1969) expresses the opinion that such a genetic classification which deliberately ignores elements in a language which lie outside the dominant component, so as to obtain an unambiguous, yes or no, classificatory result, provides no adequate basis for the reconstruction of linguistic events, nor does it give an adequate picture of linguistic relationships.

This is undoubtedly true in extreme cases. For instance, which is the dominant component in languages such as Magori (Dutton 1972, see also (II) 4.5.2.) in which the grammar is almost purely Austronesian, and the vocabulary mostly Papuan, or Maisin (Ray 1911, Strong 1911) in which the reverse appears to be true in some ways (see (II) 4.5.1.)? Or in the languages of the Reef Islands-Santa Cruz Family (East Papuan Phylum, 2.13.1.4.) in which about half the basic vocabulary is reconstructably Austronesian (Wurm 1970), and the grammar an intricate mixture of Papuan and Austronesian elements (Wurm 1969) (see (II) 4.5.3.).

However, for less extreme cases, the attitude could be taken, in contrast to Pawley's view, that a genetic classification based on the dominant element only can well be of value in the establishment of linguistic relationships, provided that the presence and nature of the non-dominant element is not ignored, but taken into account and its presence explained as far as possible in terms of sub-strata, borrowings, influences by other languages and the like. In extreme cases such as those mentioned above, Wurm suggests that the dominant element in the language structure, if one can be recognised, should be regarded as the dominant element in the language for the purpose of genetic classification, i.e. Magori should be regarded as Austronesian, and the Reef Islands-Santa Cruz Family languages as Papuan because the Papuan structural elements in them are more basic - e.g. concern the verb structure - than the Austronesian elements (Wurm 1969). Maisin is unclear even from this point of view, because in spite of its Papuan features, it may, when judging from a sociolinguistic point of view, probably be originally Austronesian rather than Papuan (Dutton, personal communication) (see (II) 4.5.2.).

The principles outlined above constitute, in essence, the basis for the classification of Papuan languages, but need to be elaborated on (see 2.2.4.).

2.2.3. LEXICOSTATISTICAL CLASSIFICATION AND STRUCTURAL EVIDENCE

The first linguist to discuss the shortcomings and difficulties of the application of the lexicostatistical method of Papuan languages was McElhanon (1970a, 1970b, 1971). He has found that the main problem of the use of the method as a survey tool is the fact that the presence of many loan words remains undetected and the results are often skewed in the direction of a chain relationship. He feels that the frequent presence of dialect and language chains in lexicostatistical classifications in the New Guinea area "provides considerable circumstantial evidence for concluding that the lexicostatistical method as usually applied is incapable of handling the phenomena caused by the wave principle and unable in many cases, if not in most cases, of providing an accurate sub-classification" (McElhanon 1970b:227).

The essence of this statement is that the lexicostatistical method can produce results which are only approximate.

One obvious way to increase the accuracy and reliability of classificatory results arrived at by the lexicostatistical method would be to identify loanwords in a lexical corpus which is to be utilized for lexicostatistical purposes, by the application of the comparative method, and to eliminate them from the corpus. However, such an approach is often not feasible in the Papuan linguistic field. There are two main reasons for this: a) detailed comparative work is only just beginning in some areas, with only preliminary results available to date, whereas in many other areas no comparative linguistic work has been undertaken; b) in many instances, loanwords may have entered a particular Papuan language thousands of years ago, and have undergone the same sound-changes as those words which are part of the original, directly inherited lexical stock of the language. It is usually not possible to detect such loanwords in the light of the low-level sophistication of present-day Papuan comparative linguistics. (However, it has been found that there has always been a very sharp increase in the number of obvious cognates shared by two or more languages, over those established by inspection only, as soon as some, however preliminary, reconstruction work had been carried out and possible proto-forms suggested - see below 2.2.5.).

To overcome the difficulty presented by unrecognised loans, Thomas and Healey (1962) have suggested a special refined lexicostatistical

approach which has as its aim the detection of the presence of such unrecognised loans and their special treatment in computations for the purpose of circumventing the problem of chaining. McElhanon investigates the applicability of this approach to the lexicostatistical classification of the Huon Peninsula area languages, but questions the validity of its assumptions and expresses doubts about its usefulness (McElhanon 1970b).

Having challenged the value of the lexicostatistical method for the classification of the languages of the Huon Peninsula area, and, by implication, of Papuan languages in general, McElhanon advocates the study of typological and structural criteria for this purpose. He suggests that such criteria are particularly useful when a number of structural features form a set or block which is associated with a group of languages. On this basis, he finds it relatively easy to sub-divide the language of the Huon Peninsula Group - i.e. what has later been recognised as the Huon Peninsula Stock (McElhanon and Voorhoeve 1970) - into two families along lines which deviate strongly from the results of their lexicostatistical assessment and the principles of lexicostatistical classification in general (McElhanon 1970a). At the same time, a couple of obviously highly mixed languages are left whose exact classificatory position still remains indeterminable, and McElhanon points out that the final decisions in such cases are unavoidably arbitrary.

Wurm is generally in agreement with McElhanon's opinions on the subject, though he is inclined to take a somewhat more moderate view.

It may be mentioned that, with more results becoming available on the languages which have been regarded as constituting the Huon Peninsula and Finisterre Stocks (McElhanon and Voorhoeve 1970), the two stocks have been combined into a super-stock (see 2.5.3.3.2. in this volume). McElhanon himself prefers to regard them as constituting a single stock containing all the families and family-level isolates originally making up the two stocks (see 2.8.1.2. in this volume). The factors impinging on family-level classification as mentioned above remain however fully valid in spite of such a reclassification.

2.2.4. CRITERIA FOR THE CLASSIFICATION OF PAPUAN LANGUAGES

In the light of what has been said so far in this chapter, two languages X and Y which share lexical cognates and/or show other similarities, will be regarded as genetically related if the following criteria apply:

2.2.4.1. *LEXICAL CRITERIA*

A) For language areas in which at least some comparative linguistic work, with reconstructions, has been carried out (e.g. the Trans-New Guinea Phylum area):

a) A number of the lexical items in Y can be shown to constitute reflexes of proto-forms reconstructed for the language group to which X belongs, and are, in the case of obviously only distant relationship, not just simple copies of the forms of these items in X when allowing for the phonological differences between the two languages on the synchronic level.

b) The lexical items of Y mentioned under a) contain at least one verb, most importantly *eat* or *say, speak,* and, rather less significantly, at least two of the range of pronouns present in Y, more importantly pronouns denoting the first or second persons singular or the first person plural, less so that of the third person singular.

c) The nouns amongst the lexical items of Y mentioned under a) contain at least some of the following: *arm* (or *hand*), *bone, breast (female), ear, eye, fire, louse,* and less importantly *mother, skin* and *water,* and do not lack a high proportion of these while a considerable number of other nouns in Y constitute reflexes of the X group proto-forms. The nouns listed have been found through empirical observation, to be more commonly cognate in related Papuan languages than others.

d) Semantic groupings of lexical items as observable in X are also present in Y even if the items concerned are themselves non-cognate.

B) For language areas for which no comparative linguistic work has been carried out, criterion a) reads as follows:

a) a number of the lexical items in Y appear to be cognate to their equivalents in X and, in the case of obviously only distant relationship, the sound correspondences observable in such apparently cognate items appear to be greater than may be expected in the light of the phonological differences between the two languages on the synchronic level.

Criteria b), c) and d) apply as under A).

2.2.4.2. *TYPOLOGICAL AND STRUCTURAL CRITERIA*

a) A number of typological and/or structural characteristics and features are shared by the languages Y, and X and other languages of the group to which X belongs. Of such shared characteristics, those connected with the structure and typology of verb forms are particularly

important and diagnostically more valuable than others except that the sharing of principles underlying the formation, distribution and function of verb forms has also high diagnostic value even if the verb forms concerned are formally different in the languages X and Y. At the same time, the sharing of principles underlying pronominal systems has also considerable diagnostic importance even if the pronouns themselves are formally different in the languages Y and X.

b) No typological and/or structural features are present in languages Y or X which are so contradictory as to be deemed incompatible and mutually exclusive, and which affect the basic verb structure and/or principles underlying it, and/or the principles underlying pronominal systems.

Note: this criterion b) is of low diagnostic importance because its applicability is very much dependent on personal judgment, and because of the fact that the influence of substrata in Papuan language may in cases manifest itself on this very level.

2.2.4.3. *OTHER CRITERIA*

In the consideration of the criteria listed in 2.2.4.1. and 2.2.4.2. in a particular instance involving two languages, the cumulative nature of evidence has to be taken into account and negative and positive evidence are mutually cancelling to some extent. In this, the criteria mentioned in 2.2.4.1. A) b), c), have much greater importance than that referred to in 2.2.4.1.A) a) if the latter appears by itself only without including b) and c). The criterion referred to under 2.2.4.1.A) d) is important, but only if other criteria pointing to the probable presence of a genetic relationship between the two languages are also observable.

Of the criteria discussed in 2.2.4.2., a) is much more important than b), and in general, the criteria listed in 2.2.4.2. carry greater weight than those given in 2.2.4.1., especially in doubtful cases, but their application is of somewhat doubtful value if none of those given in 2.2.4.1. provides positive evidence in a comparison of two given languages, unless 2.2.4.2. a) supplies formal structural evidence on the verb level, preferably accompanied by some on the pronominal level as well.

There may still be cases in which even the application of all these criteria may not yield reasonably clear results, be it on whether languages X and Y are genetically related, or on whether the genetic relationship between Y and X should be regarded as closer than that

prevailing between Y and Z, with consequent bearings upon the classification of Y. Such cases have to be decided on their merits by the classifier's judgment in the light of his experience with Papuan language classification.

To complete the picture, it may be mentioned that the nature and extent of the relationship of one of two languages studied for classificatory purposes, to a third language may sometimes decide a difficult issue: if it appears that the relationship of Y which shows relationship links with X, may be more plausible with Z in terms of what could be regarded as the "dominant component" of Y at least for this given situation, it seems more appropriate to classify Y as related to Z rather than to X.

2.2.5. DEGREES OF INTERRELATIONSHIP

To determine the degree of interrelationship of languages with a view to their inclusion into sub-families and families, stocks, and phyla, percentage figures denoting the extent of basic vocabulary sharing between them have been traditionally resorted to, though in the light of what has been said in 2.2.3., the value of such evidence by itself is often of a low order (see below). The following principles have been adopted:

Communalects have been regarded as dialects of the same language if their cognation percentages are mostly above 81%, and as separate languages if these percentages are mostly below 78% and rarely above 81%, with the decision regarding the presence or absence of cognation based on regular sound correspondences in the majority of the cases. They have been considered as members of the same sub-family if they show rarely below 45% and mostly above 55%, but below 70% basic vocabulary cognation, and as members of the same family if the percentages of basic vocabulary cognates shared by them are rarely below 20%, and mostly above 28%. They have been looked upon as members of the same stock if their cognation percentages are usually below 28% and more frequently below 20%, but only infrequently fall below 12%. They have been classed as members of the same phylum if the percentages are usually below 12%, but not lower than 5%. All these percentage figures are based on the use of a list of about two hundred basic vocabulary items which is a version of the Swadesh list (Swadesh 1955) as modified by Wurm.

In the light of what has been said in this chapter 2.2.0., especially in 2.2.3. and 2.2.4., it seems clear that the percentage figures mentioned above as denoting the extent of basic vocabulary sharing

between languages can no longer be regarded as determining the degree of the interrelationship between communalects by themselves, but that the evidence provided by such figures has to be critically weighted in the light of the general similarity between the communalects involved which manifests itself in similarities on the lexical, structural, semantic and typological levels, and especially in formal and system similarities and differences on the level of complex verb forms. Also, it has to be kept in mind that the application of comparative methods, however preliminary, and the work leading to the establishment of cognate chains within large groups of related languages has shown that, in general, lexical evidence for the interrelationship of languages is in many instances of a higher order than has been believed to be the case.

While the evidence for establishing interrelationship, and its degrees, between communalects has shifted considerably from the lexico-statistical sphere into wider and more varied orbits, the terms denoting the nature and extent of the relationship between languages and language groups, and within the latter, continue to keep their validity. Some remarks elaborating on them may be useful.

"X-level relationship" refers to the degree of relationship existing between members of the group represented by X and refers to their internal, intra-group relationship. For instance, a family-level relationship is that between various languages within a family, a stock-level relationship that between various families (or other family-level members such as family-level isolates) within a stock, etc.

An X-level group is a group which constitutes X with regard to its external, inter-group relationship. For instance a family-level group is a family whose members show family-level relationship internally, but whose external relationship, as a group, to other groups on the same hierarchical level is a stock-level relationship. Similarly, the external relationship of a stock-level family to other stocks is on the phylum level. In other words:

Group	Constituent members	Internal relationship of members within group	External relationship of the group to other groups
dialect	sub-dialects	dialect-level	language-level
language	dialects	language-level	family-level
family	languages	family-level	stock-level
stock	families	stock-level	phylum-level
phylum	stocks	phylum-level	unrelated

In the light of the degree and nature of the differences and similarities between languages belonging to the various stocks entering into the composition of various Papuan phyla, it has been found useful to introduce the concepts of **sub-phyla** and **super-stocks** to allow for greater taxonomic flexibility.

The following definitions may be given for 'sub-phyla' and 'super-stocks':

The term 'sub-phylum' denotes a section of a phylum whose stock-level members show the usual phylum-level relationship to each other, but which as a group displays marked differences from other stocks within the phylum, be it through greater distance in relationship between the members of the sub-phylum and the remaining members of the phylum, or through special characteristics of the members of the sub-phylum which sets them apart from the remainder of the phylum and increases the difference between them and the other members of the phylum. The use of the term 'sub-phylum' stresses the difference between the members of a sub-phylum and other members of the phylum of which the sub-phylum forms a part, and brings the **external** relationship of its stock-level members into focus. Each of these stock-level members of a sub-phylum is in a sub-phylum-level relationship to other members of the phylum which are outside the sub-phylum and can be looked upon individually as a sub-phylum in contrast to them.

The term 'super-stock' refers to a number of stocks within a phylum which can be grouped more closely together than other stocks within the phylum, be it through greater relational proximity between the members of a super-stock than is observable with regard to other stock-level members of the phylum to which they belong, or be it because of the presence of special characteristics shared by the members of a super-stock which makes them more similar to each other than is the case with other stocks of the phylum. Membership of a particular stock to a super-stock does not necessarily affect its relational distance to other stocks within the same phylum which are not members of that super-stock. The term 'super-stock' brings the **internal** relationship of its stock-level members into focus. Hierarchically, a super-stock is subordinate to a sub-phylum, and a sub-phylum can consist of a single super-stock, or even a single stock, family, or language.

Following the table given above, the following can be added with regard to the super-stocks and sub-phyla:

Group	Constituent members	Internal relationship of members within group	External relationship of the group to other groups
superstock	stocks	super-stock-level	phylum-level
sub-phylum	stocks	sub-phylum-level	phylum-level

2.2.6. SOME ILLUSTRATIVE EXAMPLES OF THE APPLICATION TO DOUBTFUL CASES, OF THE CRITERIA DISCUSSED IN 2.2.4.

2.2.6.1. *SKO STOCK LANGUAGES*

Languages of the Sko Stock in the northern border area between Irian Jaya and the western Sepik District of Papua New Guinea, in particular Sko itself, contain a number of lexical items which are clearly proto-Trans-New Guinea Phylum reflexes, amongst them one verb *(sleep)*. There are also three pronouns belonging to set I (see 2.3.3.2.) (the pronoun set which is by far the most prominent set in Trans-New-Guinea Phylum languages) including the very basic pronouns of the first persons singular and plural. At the same time, of the ten nouns mentioned in 2.2.4.1. A) c), *bone, eye, fire, louse* and *skin* are not proto-Trans-New Guinea Phylum reflexes, and *ear* is doubtful. On the basis of this lexical evidence, Sko could perhaps be looked upon as an aberrant member of the Trans-New Guinea Phylum. However, it has little in common with the languages of that phylum on the typological and structural levels, and shows typological and structural features in its basic verb structure which are entirely at variance with Trans-New Guinea Phylum characteristics. It has therefore been decided not to include the Sko stock in the Trans-New Guinea Phylum in spite of the quite sizable Trans-New Guinea Phylum lexical element in it which extends to verbs and pronouns, but which is being regarded as the result of the influence of Trans-New Guinea Phylum languages upon Sko Stock languages. At the same time, the links of the latter stock with members of other phyla are of a very much lower order than those which they show with the Trans-New Guinea Phylum, and the Sko Stock has therefore been classified as constituting an unrelated phylum by itself, the Sko Phylum (i.e. phylum-level Stock) (2.14.1.1.).

2.2.6.2. *PAUWASI STOCK LANGUAGES*

Members of the Pauwasi Stock in north-eastern Irian Jaya which Voorhoeve (1971) regarded as unrelated to the Trans-New Guinea Phylum,

have been found by Wurm to contain more lexical items which are proto-Trans-New Guinea Phylum reflexes than Sko. These items include one verb *(eat)*, and two important set I pronouns (first and second person singular) are present. Of the ten nouns listed in 2.2.4.1 A) c), only *ear, fire, skin* and *water* are not proto-Trans-New Guinea Phylum reflexes. This is better lexical evidence than that presented by Sko which lacks four or five of the seven more important diagnostic nouns whereas the Pauwasi languages lack only two, and which contains the verb *sleep* as a Trans-New Guinea Phylum reflex whereas the Pauwasi languages have *eat* which is diagnostically more important (see 2.2.4.1.A) b)). Sko presents somewhat better evidence than the Pauwasi Stock languages on the pronominal level only. Unfortunately, the typological and structural characteristics of the Pauwasi Stock languages are not known, but on the basis of the good comparative lexical evidence, it has been tentatively decided to include the Pauwasi Stock into the Trans-New Guinea Phylum as a sub-phylic, i.e. aberrant, member.

2.2.6.3. *KWOMTARI STOCK LANGUAGES*

The languages of the Kwomtari Stock in the north-eastern part of the West Sepik District of Papua New Guinea contain about as many lexical items which are proto-Trans-New Guinea Phylum reflexes as is the case with Sko except that there are no verbs amongst them. There are also two set I pronouns (first and third person singular). Of the nouns listed in 2.2.4.1. A) c), *ear, louse,* and *skin* are not proto-Trans-New Guinea Phylum reflexes, and *eye* is doubtful. The structure of the languages is comparatively simple which in itself constitutes a deviation from the general Trans-New Guinea Phylum pattern, and neither striking agreements, nor disagreements, with Trans-New Guinea Phylum typological and structural characteristics and structural principles have been observed. Further studies may contribute towards the clarification of the problem of their classification, but on balance, it seems best to exclude the languages of the Kwomtari Stock from the Trans-New Guinea Phylum at present. The presence of Trans-New Guinea Phylum elements in them is regarded as attributable to Trans-New Guinea Phylum influence. Links between the Kwomtari Stock languages and members of other phyla are even less pronounced than those mentioned in 2.2.6.1. with regard to the Sko Stock, and the Kwomtari Stock has therefore been classified as constituting an unrelated phylum by itself, the Kwomtari Phylum (i.e. phylum-level Stock) (2.14.1.2.).

2.2.6.4. *MIDDLE SEPIK STOCK LANGUAGES*

The members of the Middle Sepik Stock in the Eastern Sepik District contain a number of proto-Trans-New Guinea Phylum reflexes in their vocabulary, amongst them one verb *(sleep)*. Four set I pronouns are present including the important pronouns of the first person singular and plural. Of the nouns listed in 2.2.4.1. A) c), *arm, bone, ear* and *eye* are not proto-Trans-New Guinea Phylum reflexes. This is fair lexical evidence, and in addition, some of the structural features of the Middle Sepik Stock languages are similar to Trans-New Guinea Phylum characteristics, such as the presence of sentence-medial verb forms which differ according to whether the subjects of the medial and final verbs are identical or different. There are however also typological features which contrast with Trans-New Guinea Phylum characteristics such as the absence of classificatory verbs, the universal presence of a two-gender distinction in the third, and usually also the second, person singular pronouns, and phonological features, e.g. the paucity of vowel phonemes.

In general, the lexical and structural-typological evidence would make it feasible to suggest the possibility of a distant relationship of the Middle Sepik Stock languages to the Trans-New Guinea Phylum, and this was in fact proposed in Wurm 1971. However, more recent studies (Laycock 1973) have clearly demonstrated that a very much closer relationship exists between the Middle Sepik Stock languages and other languages of the Sepik area which has made it possible to include the former into the Sepik-Ramu Phylum as a prominent member of the Sepik Sub-Phylum (see 2.11.).

2.2.6.5. *LANGUAGES OF THE RAMU AREA STOCKS*

Languages of a number of stocks in the Ramu River area in the western Madang District such as the Annaberg, Ruboni and Goam Stocks contain a good number of proto-Trans-New Guinea Phylum reflexes in their vocabularies, including verbs, as well as one or two pronouns of set I in individual languages. This lexical evidence is a little better than that presented by other stocks further west such as the Pihom, Josephstaal and Wanang Stocks which have been included in the Trans-New Guinea Phylum on the sub-phylum level. However, some structural and typological features of languages of the Ramu area stocks are quite markedly at variance with those of Trans-New Guinea Phylum languages, and at the same time, their general relationship appears to be considerably closer to languages of the Sepik area. They have therefore

been included into the Ramu Sub-Phylum of the Sepik-Ramu Phylum (see 2.11.).

2.2.6.6. *SENAGI FAMILY LANGUAGES*

Languages of the Senagi Family in the Irian Jaya-West Sepik District border area which was regarded by Voorhoeve (1971) as a phylum-level family isolate contains a fair number of proto-Trans-New Guinea Phylum reflexes including one verb *(sleep)*. Three set I (and Ia - see 2.3.3.5.) pronouns are present, including the second and third person singular pronouns. Of the ten nouns listed in 2.2.4.1. A) c), only *breast* is not a proto-Trans-New Guinea phylum reflex, but an Austronesian loanword, and *ear* is doubtful. Lexical agreements between Senagi Family languages and member languages of neighbouring Trans-New Guinea Phylum stocks such as the Border and Pauwasi Stocks are of a rather low order. On the structural-typological level, the languages seem to follow the general Trans-New Guinea Phylum pattern without major deviations (though the agreements are not striking either) as far as can be judged from the very limited material available, but there is no information at hand on the existence or otherwise of sentence-medial verb forms and classificatory verbs. Some reference to gender in the third person singular appears to be present in verb forms in at least one of the languages of the family - this would reflect a substratum phenomenon observable in many of the Trans-New Guinea Phylum languages in the centre and central south of the mainland. On balance, it seems quite justifiable to include the languages of the Senagi Family into the Trans-New Guinea Phylum. However, it has been tentatively assigned sub-phylum status in view of the paucity of the information available on it and the possibility that major structural and typological deviations from the Trans-New Guinea Phylum may become evident upon further study, and also in the light of the tenuous nature of its lexical agreements with neighbouring Trans-New Guinea Phylum stocks.

2.2.6.7. *KOLOPOM (OR FREDERIK HENDRIK ISLAND) FAMILY LANGUAGES*

The languages of the Kolopom Family on Frederik Hendrik Island in south-eastern Irian Jaya show rather low lexical agreement with languages of Trans-New Guinea Phylum stocks of their general area except for their immediate neighbours, but the number of lexical items in them which are proto-Trans-New Guinea Phylum reflexes is not inconsiderable and includes verbs, amongst them *say* and *sleep*. Also, four to five set

I pronouns are present in them, including those of the first and second persons singular and the first person plural. Of the ten nouns listed in 2.2.4.1. A) c), only *bone*, *ear* and *water* are not proto-Trans-New Guinea Phylum reflexes. This lexical evidence would constitute a fair basis for the inclusion of the Kolopom Family languages into the Trans-New Guinea Phylum, but these languages differ rather markedly from the other languages of the Trans-New Guinea Phylum on the structural level in having particles instead of affixes as they are usually met with in the languages of that phylum. However, the principles underlying the functions of these particles compare quite well with those relating to affixes in other languages of the phylum. Only a few features such as the marking of the plural with nouns by a special particle are typologically in direct contrast with phenomena present in the bulk of the Trans-New Guinea Phylum languages, though some of the special characteristics of the languages of that phylum such as classificatory verbs and sentence-medial verb forms, seem to be absent.

It seems that a strong substratum is present in the Kolopom Family languages, and that their ancestral language which was probably unrelated to the Trans-New Guinea Phylum languages, was subjected to strong influence by the latter and took over from them the Trans-New Guinea Phylum set I pronoun forms and system as well as a considerable amount of basic vocabulary including verbs. They also seem to have adopted some of the basic Trans-New Guinea Phylum typological principles without getting strongly assimilated to the phylum languages on the structural level.

In the light of the criteria of classification discussed in 2.2.4., it appears that there are better reasons for including the Kolopom Family languages into the Trans-New Guinea Phylum on the sub-phylum level than to exclude them from it. The situation shows some parallelism to that of the Sko Stock (see 2.2.6.1.) which has been excluded from the Trans-New Guinea Phylum, but the lexical evidence which would support its inclusion is much weaker than that present in the case of the Kolopom Family languages, and its structural and typological features are to a great extent, completely in contrast with those present in the Trans-New Guinea Phylum languages which is not the case with those of the Kolopom languages to any comparable degree.

Recent work by Voorhoeve (Voorhoeve 1975) has demonstrated that the languages of the Kolopom Family show a fair amount of lexical links with languages of the southern Vogelkop area which have also been included into the Trans-New Guinea Phylum and constitute the South

Bird's Head Sub-Phylum in it (see 2.6.2.3.4. in this volume).

Some of the connections between the two language groups appear to be attributable to a non-Trans-New Guinea Phylum element which is present as a strong substratum in both. This has some bearing on linguistic prehistory (see 3.4.1.).

2.2.6.8. *PAWAIAN FAMILY LANGUAGE(S)*

The relationship of the language(s) (see 2.7.5.3.) of the Pawaian Family in the central north of the Gulf District to those of neighbouring groups used to be regarded as only very distant and doubtful (Wurm 1971) because of what was believed to be the low level of lexical relationship observable between them, though the relatively high degree of typological similarity between the Pawaian and these other languages had been recognised (Wurm 1964). Recent studies have shown that the Pawaian language(s) contain(s) a fair number of proto-Trans-New Guinea Phylum reflexes, amongst them several verbs including the important verb *say*. Two set I pronoun forms are found, i.e. of the first person singular and first person plural which are both very important. Of the ten nouns listed in 2.2.4.1. A) c), *arm, ear, bone* and *louse* are not proto-Trans-New Guinea Phylum reflexes. On the structural and typological levels, a number of differences from the usual Trans-New Guinea Phylum pattern are in evidence such as for instance the very low development of sentence-medial verbal forms. The Pawaian language(s) also show(s) strong influence of a substratum which is widespread in many languages of the Southern Highlands, Western and Gulf Districts, as well as of the adjacent parts of the Western Highlands and Chimbu Districts, and which manifests itself in Pawaian in the presence of an abundance of nasal vowels, a limited occurrence of bound subject markers and of sentence-medial forms with verbs, as well as of a considerable number of aspectual distinctions within it (see 2.3.2.3.). However, in other structural and especially typological fields, the Pawaian language(s) show(s) a comparatively high level of agreements with the usual Trans-New Guinea Phylum pattern, and it seems quite justifiable to include the Pawaian Family into the Trans-New Guinea Phylum on the sub-phylum level. It may be pointed out that MacDonald (1973) suggests the existence of closer relational links between the Pawaian Family language(s) and those of the Teberan Family which is another sub-phylic member of the Trans-New Guinea Phylum. In view of this, it has been decided to include the Pawaian Family with the Teberan Family into a sub-phylum-level superstock.

2.2.6.9. *THE OKSAPMIN ISOLATE*

The Oksapmin language located in the central "hub" area of the mainland shows quite high cognation percentages with languages of the neighbouring Ok Family of the Central and South New Guinea Stock of the Trans-New Guinea Phylum, but these percentages decrease rapidly in direct proportion to geographical distance, and Healey (1964) looks upon them as the result of heavy borrowings in comparatively recent times and assumes that Oksapmin is genetically unrelated to the Ok Family. Almost all the proto-Trans-New Guinea Phylum reflexes in Oksapmin are obviously closely cognate with Ok Family forms. Structurally and typologically it differs to some extent from the Ok Family languages, but not strikingly, and shows some deviations from the usual Trans-New Guinea Phylum pattern, but not to a very great extent. Its position remains doubtful and it may well be classifiable as a phylum-level isolate which has been very strongly influenced by Trans-New Guinea Phylum languages, especially of the Ok Family, with this influence being so recent that it is still recognisable as a foreign element, at least on the lexical level. At the same time, it is not possible to say whether the relative similarity of Oksapmin to the usual Trans-New Guinea Phylum pattern on the structural and typological levels is attributable to such an influence, or is the result of a possible relationship of Oksapmin to the phylum, or is attributable to chance. Added weight to the classification of Oksapmin as a phylum-level isolate seems to be given by Laycock's (1973) suggestion that Oksapmin may be related to the Yuri Isolate situated further north-west in the Western Sepik District. Yuri is apparently unrelated to any other language and not a member of any of the established phylic groups.

Oksapmin used to be classified as a doubtful member of the Trans-New Guinea Phylum (Wurm 1971), and until the situation has become clearer as a result of further study, this tentative classification will be adhered to, on the understanding that as an alternative, Oksapmin may constitute a small phylic group with Yuri and be regarded as not related to the Trans-New Guinea Phylum.

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PART 2.3.

THE NATURE OF PAPUAN LANGUAGES

2.3.1. THE NATURE OF PAPUAN LANGUAGES: INTRODUCTORY REMARKS

S.A. Wurm

A discussion of characteristics of Papuan languages as a whole is really only possible in terms of a contrastive approach involving Papuan languages of several of the unrelated groups, or of such groups and Austronesian and Australian languages. The reason for this is evident when considering that structural and typological differences between members of the various unrelated Papuan language groups can be so extensive that only few, and very general, features can be found which are typical of Papuan languages as such. Even in this, great care has to be exercised in looking for features shared by the 'majority' of the Papuan languages only, i.e. not by all or almost all of them, because the great majority of the Papuan languages belong to the Trans-New Guinea Phylum, and if this particular majority is taken as representing the Papuan languages as a whole, the often considerable typological differences between Trans-New Guinea Phylum languages and other Papuan languages would defeat the purpose of the exercise.

In the light of this, only a few very general characteristics typical of most Papuan languages will be given first and some general remarks made, to be followed by a discussion of some of the major Papuan language types and of the highly important substrata problem in Papuan languages. A contrastive statement of some of the most important features of languages of the Trans-New Guinea and Sepik-Ramu Phyla as the two largest Papuan groups, and of Australian and South-Western Pacific Austronesian languages will conclude that section. In this, it will have to be kept in mind that the features of member languages of other Papuan groups such as the Torricelli Phylum etc. are, in detail, sometimes quite different from those shown for the two large Papuan phyla

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included in this contrastive statement. A more detailed discussion from a New Guinea-wide point of view of some features of importance to Papuan linguistics will be given after that, to include features such as the distribution of personal pronoun forms, and of number systems and semantic domains.

It may be mentioned that Schmidt (1920, 1926), Ray (1927) and Capell (1933, 1941) gave descriptions of the characteristics of Papuan languages in contrast to Austronesian languages of Melanesia. These were later summarised and systematised by Boelaars (1950) and Wurm (1954). The great progress in Papuan linguistics since those summaries were written has rendered them obsolete in many ways.

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2.3.2. GENERAL PAPUAN CHARACTERISTICS

S.A. Wurm, D.C. Laycock, C.L. Voorhoeve

2.3.2.1. GENERAL REMARKS

On the phonological level, no phonemic contrast exists in many Papuan languages between r and l sounds which, mostly in the form of flaps, often are members of a single phoneme. (This feature is however present in many Austronesian languages of Melanesia as well.) Similar remarks tend to apply to p and f sounds and, in general, there is a quite widespread tendency for stops and fricatives to be in allophonic distribution. Uncommon consonant types and consonant clusters such as velar stops with lateral release, labio-velar stops and nasals, uvular or post-velar stops, implosive stops, bilabial trills, and pre-glottalised voiced and voiceless stops, are met with in some Papuan languages. Uncommon vowel types are rarer, but complex suprasegmental systems are frequently met with. The frequent interchange of k and t, and n and ŋ, in dialects of the same language and in closely related languages, is a typical feature.

On the morphological level, the following features are frequently found in Papuan languages: a) a dual number in person markers (this does not apply to several of the groups included in the Sepik-Ramu Phylum); b) a mostly covert noun classification either through classificatory verbs or person marking in pronoun and verb systems, more rarely through complex concordance systems; c) a usually very considerable morphological complexity of the verb system; d) special sentence-medial verb forms denoting the subordination of the first of two verbs, frequently with different forms denoting identity and non-identity of the actors of the actions referred to by the two verbs (such medial verb forms are uncommon outside the Trans-New Guinea and Sepik-Ramu Phyla); e) the rare occurrence of morphologically signalled non-singular forms of nouns (this statement does not apply to members of

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the Torricelli Phylum, to some of the Sepik-Ramu Phylum and some others which have such forms); f) only two or three mono-morphemically signalled numerals in many languages, but the appearance of complicated counting systems based on parts of the body used as tallies in others.

On the syntactical level, the almost universally present word order subject-object-verb, with the verb constituting the last word in a clause or sentence, may be mentioned.

However, while these features are far too few and far too general to be indicative of a notable typolcgical cohesion between different Papuan languages, some factors emerge from an assessment of the Papuan languages as a whole which may be interpreted as betraying a closer (albeit in some ways secondary) affinity of these languages to each other than has been believed to be the case. Some of these have for instance been touched upon below in 2.3.3.

2.3.2.2. PAPUAN LANGUAGE TYPES

In the discussion of the distribution of personal pronoun forms in Papuan languages in 2.3.3., attention will be drawn to the presence of some correlation between the occurrence of pronouns of certain sets and of certain typological characteristics in given Papuan languages and language groups. In the light of this, it may be mentioned that in many languages whose pronouns belong exclusively or very predominantly to set I (see 2.3.3.2.), the following typological features tend to prevail: absence of gender and noun class systems showing concord and overt indication with nouns and/or pronouns, but presence of noun-classification through the appearance of classificatory verbs; a general tendency towards suffixing, though object markers with verbs may be prefixes; absence of overtly marked number forms of nouns; presence of sentence-medial verb forms as distinct from sentence-final verb forms; morphological complexity on the verb level is usually very high - though often markedly less so with languages with pronouns of the set I which are outside the Trans-New Guinea Phylum - with great development of aspectal, modal and temporal references, and references to varied sets of persons (subject, object, beneficiary, etc.).

Languages whose pronouns belong largely to set II (see 2.3.3.3.) tend to display the following features: presence of a two-gender system overtly indicated with pronouns and person markers with verbs; a general tendency towards prefixing, especially with regard to subject-markers with verbs and possessive affixes with nouns; presence of overtly marked number forms of nouns; absence of sentence-medial verbal forms; morphol-ogical complexity on the verb level is usually very high, though less on

the aspectual, modal and temporal levels than on the levels of person, gender and number indication, with many languages showing verb stem changes and suppletion in connection with the indication of the number of the object and subject, and the marking of tense; morphological complexity on the nominal level can be quite high, in particular in connection with the number forms of the nouns.

Languages whose pronouns are largely members of set III (see 2.3.3.4.) show characteristics which are either those associated with the pronoun forms of set I, or with those of set II, with the first possibility predominating.

In many instances, the differentiation between these two sets of typological features is not clear-cut. So for instance, many languages which have pronoun forms of set I and, in general, display typological features associated with this set according to what has been said above, also have a two-gender system overtly indicated with pronouns and person markers in verbs. Other such languages show an even more strongly mixed type in having, in addition, prefixed subject markers, and lacking utterance-medial verbal forms. Some also have number forms with nouns.

As a general observation, the presence of a two-gender system is a feature of a large number of Papuan languages belonging to several unrelated groups. The forms of the free and bound person markers and the principles underlying their appearance and functions are, in several cases, suggestive of the possibility of a common origin even if they appear in languages believed to be unrelated to each other. In terms of linguistic prehistory, it may well be possible to see in this feature a characteristic of an old group of Papuan languages which may have, in part, been interrelated and otherwise typologically similar, and may have occupied a large part of the New Guinea mainland before they were largely swamped by later Papuan languages unrelated to and typologically different from them and in which this characteristic is today only present as a substratum feature, often in languages which are generally more or less aberrant within particular groups (see 3.4.1. in this volume). The obvious correlation between the distribution of set II pronouns and gender distinction has been mentioned above, but there are some regions in which gender distinction is present and set II pronouns are lacking, and vice versa. It seems that in some such cases, the original gender distinction has been lost under the impact of non-gender languages (e.g. in the south-east of the mainland and in some areas in the Highlands in Papua New Guinea), whereas in other areas (e.g. the centre and central south of the mainland) the gender distinction has been preserved and the set II pronouns replaced by pronouns

of other sets, largely of set I.

Languages whose pronoun range includes the 2 sg. member of (sub)set Ia (see 2.3.3.5.) display features of either of the two main types, with several instances of mixture between the two. The same applies to most of the languages with pronouns of set x (see 2.3.3.6.). Many of these show the somewhat simplified version of the characteristics of the first main type as referred to above in the discussion of that type with reference to languages with pronouns of set I which are not members of the Trans-New Guinea Phylum.

A considerable number of the languages whose 1 sg. pronoun belongs to set B (see 2.3.3.7.) are characterised by a multiple-classifying system with elaborate concord, though they sometimes lack a two-gender system. Their morphologies are mostly extremely complex and display features of either or both of the two main types, sometimes plus features which are quite unusual for Papuan languages in general.

In addition to the types discussed so far, two further types may be mentioned which cannot be directly correlated with the occurrence of pronoun forms of one of the sets discussed, though with the first of these types, pronouns belonging to sets I, Ia and x predominate, whereas with the second type, the pronouns tend to belong to sets I, II and Ia.

The characteristics of the first of these types are essentially those of the first of the two main types discussed above, usually in a somewhat simplified form, but in addition, a two-gender system is present, as well as a multiple-classifying system with concord. In view of this, this type does not constitute a basic type like the first two mentioned above, and the additional one discussed below, but is a mixed type containing characteristics of the first two with those of the first predominating, plus a substratum feature. However, seeing that this particular combination of features constitutes a characteristic trait of a number of languages, with this set of features cutting across stock and even phylum boundaries, it has been decided to regard it as one of the main types of Papuan languages though its non-basic nature is clearly recognised. Languages belonging to this type are for instance in the Upper Sepik area in the vicinity of multiple-classifying languages to whose substratum influence the presence of multiple-classifying systems in the languages under discussion may well be attributable.

The second of the two types under review is a comparatively simple type with relatively little morphological elaboration of a specific type. Such languages are mostly members of the Sepik-Ramu Phylum though some have been included with the Trans-New Guinea Phylum, or are

outside of both. It appears that this feature may be original rather than resulting from a loss of complexity, and it may constitute the original type of the Sepik-Ramu Phylum languages.

Some other types still exist - e.g. languages of the Sko phylum-level Stock on the central north coast of the mainland have a tonal morphology - but their importance for the Papuan languages as a whole is limited.

2.3.2.3. SUBSTRATA

The presence and influence of substrata in Papuan languages and language groups constitutes a problem of prime importance in Papuan linguistics and has to be taken account of in many aspects of it as has been implied in much of what has been said in 2.2.0., especially 2.2.2.. Substrata phenomena have been mentioned in various chapters in this book which deal with Papuan languages, and the reader will find additional information there (e.g. in several sections of 2.7.).

In essence, substrata phenomena are either a) features associated with the four main language types mentioned above in 2.3.2.2. (of which, as has been pointed out, the third is itself a mixture of characteristics of the first and second types plus an added substratum feature), with features of any of these four types appearing as a subsidiary characteristic in a language or language group whose main characteristics belong to another of the four types, or are typical of that language or group only, or b) other characteristics of a particular language group which appear in languages which stand outside that group, or c) regional characteristics not ascribable to either a) or b). Because of the diffuse nature of the distribution of the four main types and their extensive interaction, the following distinctions are of practical value from the point of view of descriptive convenience:

1) Some substrata features can constitute characteristics of a particular language group which appear in other, unrelated, languages and language groups and which are attributable to the interaction, and influence upon each other, of the two language groups involved.

The question of the appearance of pronoun forms of particular sets in several unrelated language groups can be marginally included here with regard to the presence of set I (and Ia) pronoun forms which constitute a typical Trans-New Guinea Phylum feature (and are ascribable to the same migration which is assumed to have spread the Trans-New Guinea Phylum languages through the New Guinea mainland (see 3.4.1.)), in languages of other phylic groups where their appearance is clearly attributable to Trans-New Guinea Phylum influence. The situation is

rather different with sets II and III pronoun forms which cannot, to the same extent, be directly associated with present established phylic groups (except perhaps to some degree with the West Papuan Phylum), only with postulated past language migrations (see 3.4.1.). At the same time, set B pronouns appear to be largely associated with substrata as described below under 2).

2) Some other substrata features observable in several, often unrelated or only distantly related languages and language groups cannot be directly associated with known characteristics of other languages, or with characteristics believed to be attributable to postulated language migrations, but seem to be attributable to the earlier presence, in certain areas, of languages and language types upon which later language migrations ultimately resulting in the present-day linguistic picture in the New Guinea area have been superimposed. Such substrata manifest themselves in the form of regional characteristics which are not associated with the features diagnostic of the four main language types described above in 2.3.2.2., or which, within a language or language group not closely related to other languages, are typical of that particular group or language alone. Language groups or isolates unrelated to other languages may have unique features which are however not regarded as substrata features, but as characteristics of these unrelated languages themselves. If such languages show basically typological features clearly belonging to one of the four main types or a mixture of them, and have only one or a few unique features of relatively minor importance added to them, these features may be attributable to a substratum, but in view of the unique nature of such unrelated languages, this remains questionable.

Such regional characteristics have been observed on the phonological and morphological levels, and good examples are the following:

The abundant presence of nasal vowel phonemes, in many instances correlated with a lack of bound subject markers with the verb, simplicity or complete absence of sentence-medial verbal forms and a proliferation of aspectual markers, is typical of many languages of the Southern Highlands, Western, and Gulf Districts, as well as of the adjacent parts of the Eastern Highlands and Chimbu Districts, with these languages belonging to different stocks and sub-phyla within the Trans-New Guinea Phylum. This regional characteristic is obviously ascribable to the influence of a substratum in that area and may be the consequence of the immigration of a language element from the area of the phylum-level Left May Family in the Sepik Districts (see 3.4.1. in this volume).

Similarly, languages of the Lower Sepik (Nor-Pondo) Sub-Phylum and the Upper Sepik Super-Stock of the Sepik-Ramu Phylum, some of the Torricelli Phylum and languages of the East Papuan Phylum share a somewhat varied, complicated, in some languages overt, noun class system which is accompanied by a concordance system of sometimes quite formidable complexity. This feature which for some of the language groups referred to coincides with the appearance of the set B 1 sg. pronoun form and constitutes one of the composing elements of the third of the four main language types mentioned in 2.3.2.2., is also likely to reflect substratum influence.

The languages of the Leonhard Schultze Sub-Phylum of the Sepik-Ramu Phylum show a multiple classifying system which is quite different from the ones referred to in the above paragraph and is quite unique in Papuan languages. It is undoubtedly attributable to the presence of a strong substratum.

2.3.2.4. CONCLUDING REMARKS

To prevent any possible confusion arising in the mind of the reader over the multiple aspects of the distribution of typological features as mentioned and discussed in this chapter and elsewhere in this volume, it has to be kept in mind that this description and discussion of such features follows four different points of view: 1) that of the distribution of the pronoun forms belonging to the different sets discussed in 2.3.3.; 2) that of the nature and occurrence of the main language types (see 2.3.2.2.) of which the latter shows some correlation with the distribution of some of the pronoun sets; 3) that of the nature and occurrence of substrata of various kinds (see 2.3.2.3.); 4) that of the characteristics of individual languages and language groups which are to a great extent the result of an interaction of the various aspects of what has been said above under 1), 2) and 3), plus special features which may be characteristic of individual languages and language groups.

For the discussion of the features of individual languages and language groups from descriptive and comparative angles, what has been said above under point 4), with some regard to the fact that those factors are the result of what has been mentioned under points 1)-3), will be regarded as primary and basic.

2.3.2.5. AUSTRALIAN, PAPUAN AND AUSTRONESIAN CHARACTERISTICS IN CONTRAST

As has been mentioned in 2.3.1., only characteristics of languages of the Trans-New Guinea and Sepik-Ramu Phyla will be included in this contrastive statement.

The choice of the features contrasted or introduced as titles in this section has been determined by the presence of these features and their special nature in any one (or several) of the four language groups included here.

	Australian	Trans-New Guinea Phylum	Sepik-Ramu Phylum	Austronesian in Melanesia
PHONOLOGY:				
Consonant Phonemes:				
Linear Distinctions:	at least four, usually five to six, maximally seven. Numbers of linear distinctions identical for stops and nasals (disregarding the glottal stop) and often identical for oral stops and laterals	usually three to five. Number of linear distinctions in stops and nasals often different, those in stops and laterals always different	usually three to five. Number of linear distinctions in stops (disregarding the glottal stop) and nasals not commonly identical, those in stops and laterals always different	usually three to five, predominantly three. Number of linear distinctions in stops and nasals often different, those in stops and laterals always different
Series of Stops:	mostly only one; if two (or more), the difference between them rests on voicing or length, or aspiration	generally two, the difference between them rests mostly on voicing and/or prenasalisation	mostly only one; if two, the difference between them rests on prenasalisation or fricativisation, rarely on voice	almost universally two, very rarely more. Difference between two series rests on voicing often accompanied by prenasalisation. If more than two, aspiration usually plays a part.
Retroflexed Consonants:	very common: stops, nasals and laterals	almost absent	absent	rare
Interdental Consonants:	very common	absent	absent	almost absent

	Australian	Trans-New Guinea Phylum	Sepik-Ramu Phylum	Austronesian in Melanesia
r-Sounds:	almost universally two, sometimes three; always in phonemic contrast with l sounds of which there are often more than one	one, very commonly not in phonemic contrast with l which is allophonic	one, often not in phonemic contrast with l	one, often not in phonemic contrast with l which is frequently allophonic
ŋ:	universal, statistically very frequent per language, occurring in all positions	uncommon*, except for some regions, e.g. Trans-Fly and Huon Pensinsula, statistically not very frequent in languages of such regions, occurring in all positions	uncommon*, occurring only medially and finally	uncommon*, occurring in all positions
Palatalised Consonants:	universal	present, but not very common	fairly common	rare
Fricatives:	very rare	present, but predominantly only one (s) per language	present, more than one per language	present, often more than one per language
Labialised Consonants:	absent	rare	common	very common
Uncommon Consonants:	rare	present: laterally released, labio-velar, implosive, pre-glottalised voiced and voiceless stops; labio-velar nasals; bilabial trills	rare	uncommon

* Except as a phonetic element in prenasalised g

	Australian	Trans-New Guinea Phylum	Sepik-Ramu Phylum	Austronesian in Melanesia
Phonetically widely varying Consonant Allophones:	absent	present	absent	absent
Stops have Fricative Allophones:	no, except in phonologically aberrant languages (Papuan influence?)	very commonly	rarely (only in Lower Sepik and Ramu areas)	no
Fricatives have Stop Allophones:	no	rarely	sometimes	no
Vowel Phonemes:				
Basic Vowel System:	usually three vowels a i u, with a statistically prevalent per language; higher numbers of vowels occur infrequently	usually five vowels, lower and higher numbers of vowels occur infrequently	low number of vowels: usually three to five; frequent occurrence of a schwa-phoneme largely functioning as automatic consonant separator	usually five vowels, higher numbers of vowels occur in certain areas
Nasal Vowels:	almost absent	frequent in some areas	rare	rare
Uncommon Vowels:	rare	not very frequent	rare	frequent in some areas
Vowel Phonemes have a wide Range of Allophones:	yes	no	yes	no

	Australian	Trans-New Guinea Phylum	Sepik-Ramu Phylum	Austronesian in Melanesia
Vowel Sequences:	rare	present	absent	present
Suprasegmentals:				
Suprasegmental Systems are Complex:	no	yes	no	no
Phonologically relevant Tones:	probably absent	frequently present	largely absent	largely absent
Morphophonemics:				
Sound Assimilation:	very rare	frequent	rare	rare
Elaborate morphophonemic Changes:	restricted to a few affixes, otherwise largely absent except in north and north-west	common	few	few
MORPHOLOGY:				
General:				
Complexity of Morphological Systems:	medium to high	mostly very high to extreme	low to medium (except for languages of three aberrant subphyla in which it is high to extreme)	very low to medium

	Australian	Trans-New Guinea Phylum	Sepik-Ramu Phylum	Austronesian in Melanesia
Nature of Morpholcgy:	elaborate affixation, transparent, except for subject-object markers with verb in most languages in north and north-west	elaborate affixation and inflection, transparency often veiled through morphophonemic changes	uncomplicated affixation, mostly transparent; use of particles regionally common	uncomplicated affixation, generally transparent; use of particles common
NOUNS:				
Noun Class Systems:	absent from the bulk of Australia; overt class systems with elaborate concord systems, some with cross-cutting gender systems, in the north and north-west and very few isolated areas elsewhere	covert class system through classificatory verbs very common; in parts of the centre, central south, the south eastern section of the central part, the west, and the north-west, a co-occurring, often rudimentary, two-gender system mostly only manifested in third person singular free and/or bound person markers with verbs	overt two-gender system manifesting itself in free and bound person markers of the third (and sometimes also the second) person singular fairly common; covert multiple class system in Upper Sepik Super-Stock (cross-cutting); overt multiple class system in Nor-Pondo Sub-Phylum (not cross-cutting) and in Leonhard Schultze Sub-Phylum	noun classification through a range of semantically determined markers indicating possession universal
Morphologically signalled Plural Forms:	rare	very rare	common in Lower Sepik area and in Ramu Sub-Phylum	absent

	Australian	Trans-New Guinea Phylum	Sepik-Ramu Phylum	Austronesian in Melanesia
Incorporation of Object Noun into Verb in suppleted Form:	in some languages in the north	absent	absent*	absent
Person Markers:				
Comparability of Personal Pronouns within Interrelated groups:	generally comparable except for very few areas	comparable over wide areas, especially the central regions, and belonging to set I (and Ia). Set III forms very strongly in evidence in some well-defined, predominantly sub-phylic, regions. Set II forms strongly present in largely sub-phylic marginal areas	seven root forms observable for all pronouns in the greater part of the area, each language containing about five of them, with the relationship between form and meaning often changing from language to language. As a result of this, pronouns in individual languages tend to formally belong to different sets (e.g. the 1sg. pronoun form wən is a member of set Ix, but 2sg. wən one of set IIIx). Set x is strongly in evidence	universally comparable

* Except that in the highly aberrant sub-phylic Leonhard Schultze Family, a somewhat similar system of suppleted nouns functioning as class markers has been observed in connection with the adjective system.

	Australian	Trans-New Guinea Phylum	Sepik-Ramu Phylum	Austronesian in Melanesia
Dual Forms:	widespread	widespread	regionally common	very general
Trial Forms:	present in a few areas	present in some areas	lacking	fairly common
Inclusive-Exclusive Forms in First Person non-Singular:	fairly frequent	rare	rare	universal
Subject Marking on Verb through bound Person Markers:	quite widespread	very common	fairly common	universal
One bound Subject Marker denoting two or several Different Persons:	absent	common, especially in second and third person non-singular; found in a few areas also with regard to the free personal pronouns	present in some areas; a comparable phenomenon occurs in other areas with regard to the free personal pronouns (usually of the second and third person non-singular)	absent
Object marking on Verb through bound Person Markers:	quite widespread	quite common	uncommon	universal

	Australian	Trans-New Guinea Phylum	Sepik-Ramu Phylum	Austronesian in Melanesia
Position of bound Subject and Object Markers in relation to each other:	together, predominantly subject-object	separated or together with approximately equal frequency. When occurring together, their order is mostly object-subject	together, mostly subject-object	separated
Appearance of bound Subject (and Object) Markers with words other than Verbs in a Sentence:	frequent	absent	absent	absent
Indication of Possession:	through special forms of the personal pronouns; not uncommonly through affixes	through the personal pronouns usually in a modified form; fairly commonly through affixes. Some languages, most of them adjacent to Austronesian languages, show possession indication systems based on principles similar to those present in the Austronesian languages of Melanesia	through the personal pronouns with or without suffixes added to them, fairly commonly through affixes	nouns denoting body parts and relationships, and a few other nouns, are provided with possessive suffixes; with other nouns, the same suffixes are added to a usually quite small series of possession nouns, with the appearance of any particular one of these possessive nouns determined by semantic criteria, and the possessive nouns + suffix constituting an adjunct to the noun denoting the object possessed

	Australian	Trans-New Guinea Phylum	Sepik-Ramu Phylum	Austronesian in Melanesia
ADJECTIVES:				
Appearance of Reduplicated Adjectives:	rare	rare	not uncommon	common
Number Systems:	almost universally binary and additive	mostly binary and additive; in some areas systems based on body parts used as tallies	trinary, quinary and mixed binary-quinary additive systems; regionally, systems based on body parts used as tallies	quinary, imperfect decimal, decimal and vigesimal multiplicative systems
VERBS:				
Presence of a Range of different Existential Verbs:	no	yes	no	no
Verb Stem undergoes Changes according to the Person of the Object or Beneficiary:	no	in several areas	not common	no
Verb Stem undergoes Changes according to Number of the Object:	no	in several areas	no	no
Indication of the Negative:	separate from the verb	part of the verb	separate from the verb	separate from the verb, sometimes combined with bound subject marker in particle form

	Australian	Trans-New Guinea Phylum	Sepik-Ramu Phylum	Austronesian in Melanesia
A Declarative Marker appears with the Verb:	no	commonly in several areas	no	no
Indication of the Interrogative:	mostly by intonation only	frequently by an affix which is part of the verb complex	generally by a particle loosely connected with the verb	mostly by intonation only
Distinction of Realis and Irrealis Forms:	rare	common	rare	rare
A Passive is Present:	in a few areas	no	no	no
Special Sentence-Medial Verb Forms are present:	in some areas	very common, universal over a wide area	in a number of areas	no
SYNTAX:				
Basic Word Order:	mostly very free, preferred order often subject-object-verb	rigid: subject-object-verb	rigid: subject-object-verb	right: subject-verb-object
Subordinate Clauses:	precede or follow main clause; subordination is mostly expressed by juxtaposition, in some areas by special medial verb forms	precede main clause; subordination is expressed by a set of elaborate special medial verb forms	precede main clause; subordination is expressed by a set of verb forms less complex than in the Trans-New Guinea Phylum	precede or follow main clause; subordination is expressed by particles

This short contrastive statement may amply illustrate the typological differences between the Trans-New Guinea and Sepik-Ramu languages on the one hand, and those present between them and the Australian and the Austronesian languages of Melanesia on the other.

2.3.3. PERSONAL PRONOUNS

S.A. Wurm

2.3.3.1. INTRODUCTORY REMARKS

As has been pointed out in 2.3.1., the distribution of the forms of personal pronouns in Papuan languages on a New Guinea-wide basis constitutes a matter of some importance in Papuan linguistics. With rare exceptions, these pronouns belong to three basic sets whose members are formally distinct but of which one set, set III, shows strong connections with the other two and may well be ultimately derived from them (see 2.3.3.4.4.). The distribution of these sets cuts across relationship boundaries in many instances. In addition to these three basic sets, two subsets are present, as well as a small set manifesting itself only in the form of the first person singular.

Detailed studies of the distribution and other noteworthy features of all these sets have been carried out by Wurm. The results have also been mentioned in Wurm 1978, and the full results may be published elsewhere. The following is a summary statement.

The discussion will be limited to the personal pronominal forms encountered in the three singular persons, and the first and second person of the plural. Because of the gaps in the occurrence of dual forms and their frequent derivation from plural forms through affixes, their comparability is impaired, and a discussion of the third person plural forms is made difficult through gaps in the materials and much more extensive variability of the forms than is observable in the other persons.

Wurm, S.A. "Personal Pronouns". In Wurm, S.A. editor, *New Guinea area languages and language study, Vol. 1, Papuan languages and the New Guinea linguistic scene.* **C-38:191-218**. Pacific Linguistics, The Australian National University, 1975. DOI:*10.15144/PL-C38.191*

2.3.3.2. SET I

2.3.3.2.1. *DISTRIBUTION*

The strongest of the three basic sets mentioned above which will be referred to as set I, shows a very wide distribution. It is very common within the Trans-New Guinea Phylum for two to five, very frequently three to five, of the five pronominal forms listed in 2.3.3.1. to belong to set I, and their appearance can be regarded as constituting a typical Trans-New Guinea Phylum characteristic, though in some, very predominantly sub-phylic, areas within the Trans-New Guinea Phylum, pronoun forms belonging to sets II and III prevail. Outside the Trans-New Guinea Phylum, set I is quite strongly in evidence in the West Papuan Phylum in the northern Vogelkop, and in the East Bird's Head Phylum. It is also very strongly present in the Sepik-Ramu Phylum (especially in the Sepik Sub-Phylum), the East Papuan Phylum, and to a somewhat lesser extent, the Sko phylum-level Stock. In a good proportion of these areas, its presence may well be attributable to direct influence by Trans-New Guinea Phylum languages.

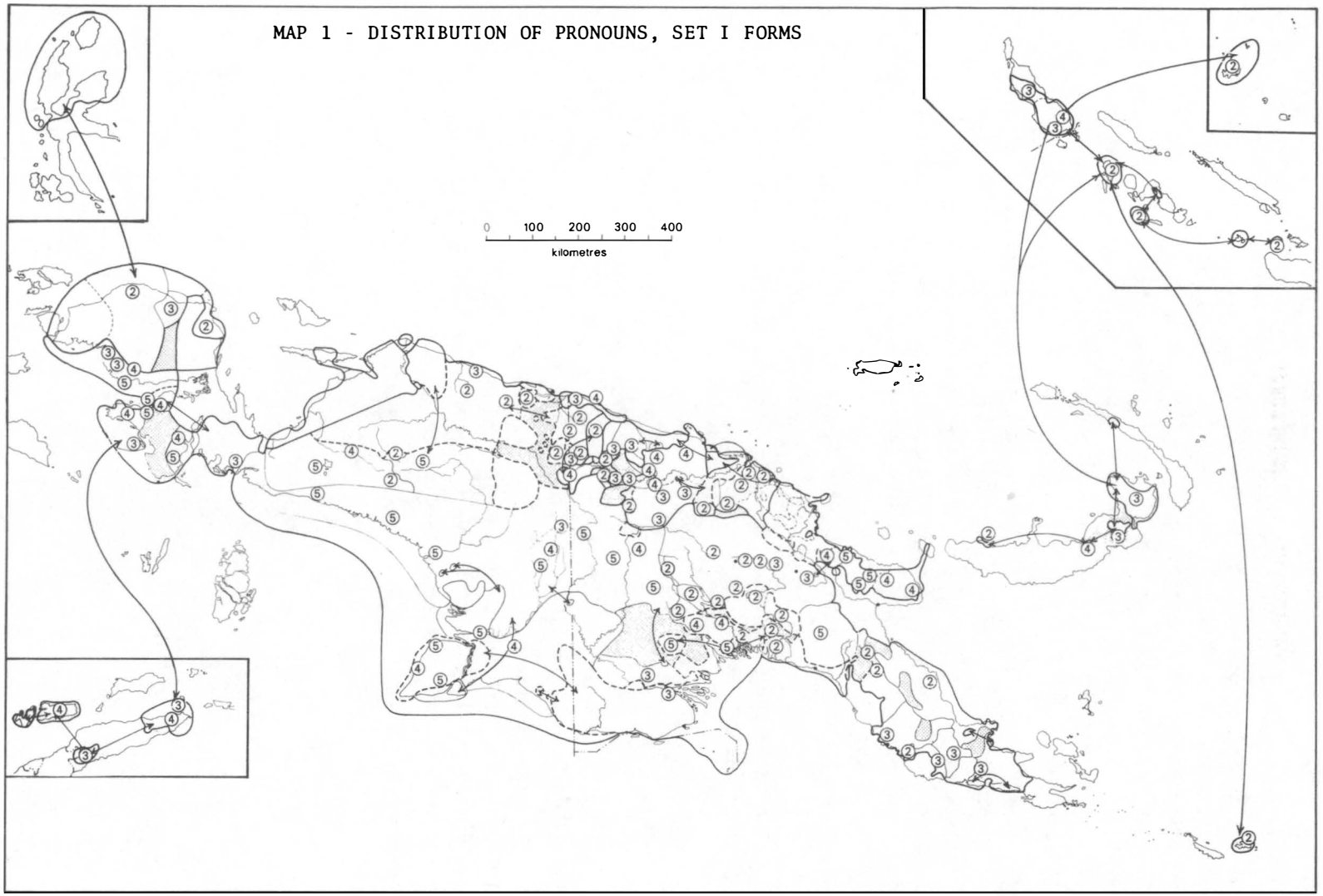
The Distribution Map of set I pronouns given below shows occurrences of pronoun forms belonging to set I in the New Guinea area, with the figures indicating how many of the five forms under consideration belong to set I in individual languages. Because of the size limitations of the map, one language has often been chosen to represent a cluster of nieghbouring languages in the areas of set I pronoun occurrences. Also, only two or more occurrences in given languages are indicated to avoid overloading the map, and also in view of the fact that because of the simple phonemic structure of the largely monosyllabic pronouns, the chance of accidental similarity of a given pronoun to the characteristic set I base forms is considerable. The base maps are simplified versions of the two folding maps following p.26.

2.3.3.2.2. *CHARACTERISTICS*

Set I shows the following features:

1) The difference between the masculine and feminine 2sg. forms, if occurring (which is very rare with set I) is always based on a vowel contrast (usually a/u) only, with both members belonging to set I, e.g. Telefol (Central and South New Guinea Stock, Trans-New Guinea Phylum): kab = *you* sg.m., kub = *you* sg.f.

MAP 1 - DISTRIBUTION OF PRONOUNS, SET I FORMS



2) If in a masculine-feminine pair of 3sg. pronouns, the masculine or the feminine form belongs to set I, the opposite form usually also belongs to it (though there are some exceptions, with the opposite form belonging to sets II or III), with the difference between them usually based on a vowel (often e~i~a/u~o) or consonant contrast, e.g. Ninggerum (Central and South New Guinea Stock, Trans-New Guinea Phylum): ye = *he*, yu = *she*; Mayo (Tama Family, Sepik-Ramu Phylum): ra = *he*, ta = *she*.

3) In languages in which an inclusive-exclusive contrast is present with 1pl. pronoun forms - a feature probably attributable to Austronesian influence in the majority of the observed cases, so for instance in Timor, Northern Halmahera, and the Vogelkop, Bomberai and Huon Peninsulas - the inclusive and exclusive forms mostly belong to two different sets. If one of them belongs to set I, the other one is predominantly a member of set II, less commonly one of set III.

4) The characteristic base consonants in the predominantly monosyllabic and CV set I pronouns forms are:

sg.		pl.	
1	n	1	n
2	k~g~ŋg	2	k~g~ŋg~ŋ, t~d~r~s~y
3	y~t~d~r~l~s, Vk(~-g~-ŋ)		

The alternations of these consonants which, in some instances, can go beyond those indicated are along the lines mentioned in 2.4.1.5.2.1. in this volume. With the exception of 3sg. Vk, the consonants are commonly word-initial, but forms with a vowel, mostly a-, preceding them are met with in some areas (see below 2.3.3.2.3.).

Important basic forms of set I pronouns are:

sg.		pl.	
1	na	1	ni
2	ka	2	ki~te
3	ye~te~Vk		

2.3.3.2.3. *ARCHAIC FORMS*

In a number of languages, bi- and trisyllabic base forms and monosyllabic forms with a final consonant are encountered. While in some of these instances, the final syllables or consonants may constitute unrecognized function morphemes, there could be reasons for assuming that many such pronoun forms are archaic forms, without appearing to be original: in the light of observations made regarding 3sg. pronoun forms which appear to be fused into one form from two elements which are 3sg.m. and 3sg.f. forms belonging to different sets (see 2.3.3.9.), it may seem possible that many of these long forms constitute fused forms composed of pronominal forms of different sets. This assumption appears to be further supported by the fact that such long forms of which the first part belongs to set I, are virtually absent from the extreme west of the New Guinea area, e.g. from Timor-Alor-Pantar and the Vogelkop and Bomberai Peninsulas, though these areas may well be those of the first appearance of the language migration which seems to have brought set I into the New Guinea area. However, long, and possibly fused, set I forms are present in regions in which mutual influences and mixing of language strata associated with different pronoun sets (see 2.3.2.2.) are strongly in evidence such as the central south (and the centre) of the New Guinea mainland, and areas into which language migrations appear to have directly proceeded from the central south, such as the Huon Peninsula, and the Binandere Stock areas to the south-east of the latter (see 3.4.1.).

In view of this, such long and possibly fused forms, while apparently older than short forms found in some other parts of the New Guinea area, especially in its eastern half, seem to be rather less archaic than the forms with initial vowel mentioned below. However, their distribution in the New Guinea area is of considerable importance to linguistic prehistory (see 3.2.1. and 3.4.1.).

In the western half of the New Guinea mainland, in the eastern half in the north in the Sepik and Madang Districts, and in the south in the Gulf District, pronoun forms are found which correspond to the set I base forms, but have initial vowels, in addition. In individual languages in the west and south, they are met with in two to five instances out of the possible five - disregarding gender and inclusive-exclusive distinctions - pronoun forms under consideration, whereas in the north, their occurrences are limited to single isolated instances

in the languages in which they are present. These forms are likely to be rather archaic, and their uneven distribution as mentioned above has a bearing on linguistic prehistory (see 3.2.1. and 3.4.1.).

2.3.3.3. SET II

2.3.3.3.1. *DISTRIBUTION*

The second set which has been called set II, shows a much more regional distribution than set I. It is mainly present in the Northern Halmahera-Vogelkop Peninsula region, in much of the northern part of the non-peninsular eastern section of Irian Jaya, in a small part of the south-eastern portion of Irian Jaya, the Trans-Fly area, the central north of the mainland, the Torricelli Phylum and the Ramu Sub-Phylum (Sepik-Ramu Phylum) areas, in three further areas in the Trans-New Guinea Phylum, i.e. two in the Papua New Guinea Highlands and one in the south-east, and finally in parts of the East Papuan Phylum, in particular on Rossel Island (in Yele), northern New Britain and New Ireland, Bougainville and the Solomon Islands.

For the Distribution Map of set II pronouns given below, the same principles of presentation have been adopted as has been the case with the map of set I forms (see 2.3.3.2.1.).

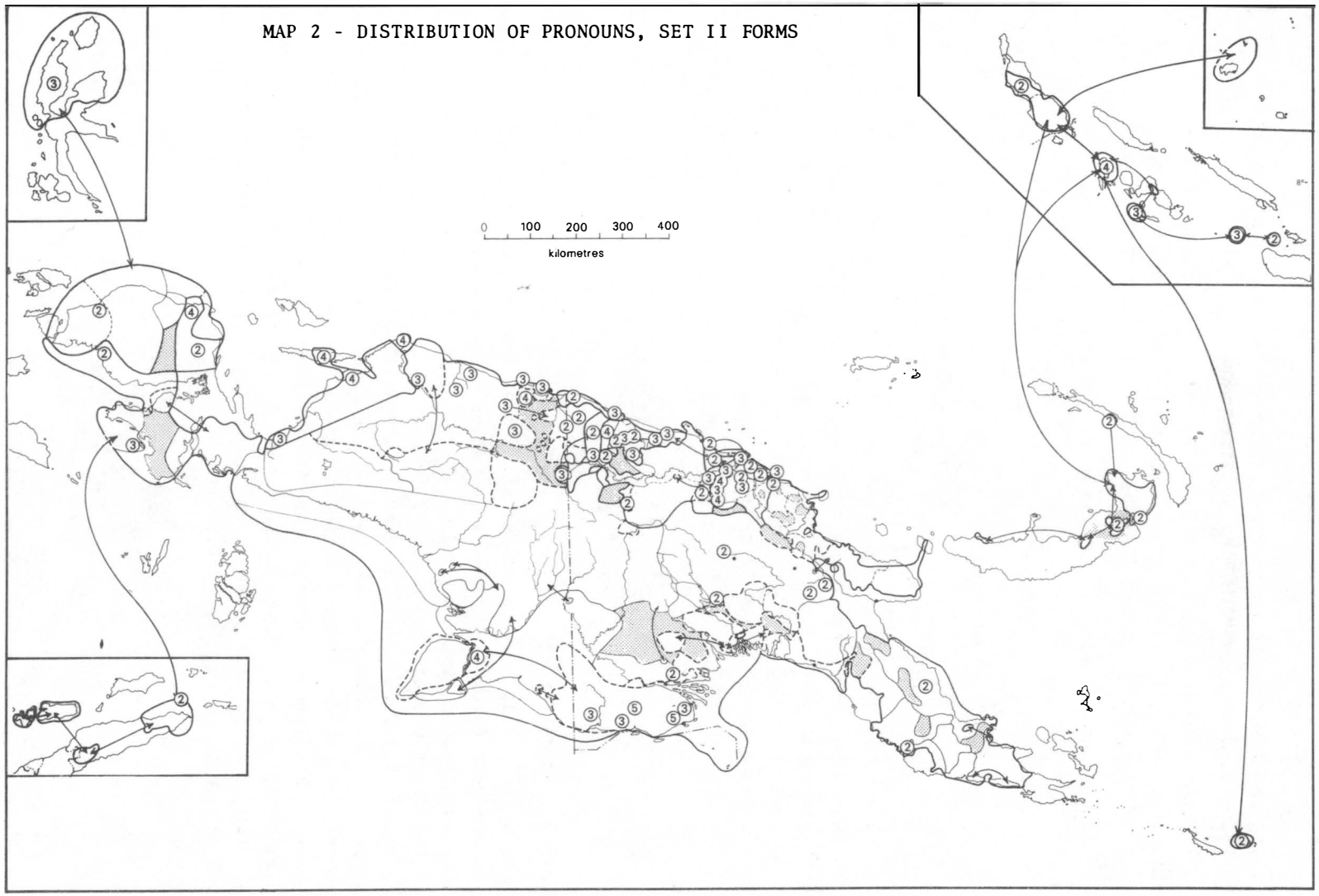
2.3.3.3.2. *CHARACTERISTICS*

Set II shows the following characteristics:

1) If in a masculine-feminine pair of 2sg. pronouns, the masculine form belongs to set II - which is mostly the case with such pairs unless they both belong to set I (which is rare: see 2.3.3.2.2., 1)) - the feminine form regularly belongs to set III, e.g. Iatmul, Middle Sepik Stock, Sepik-Ramu Phylum: mən (set II) = *you* sg.m., ñən (set III) = *you* sg.f. Exceptions to this situation are very few.

2) In masculine-feminine pairs of 3sg. pronouns in which one of the two gender forms belongs to set II, the other form is only very rarely also a member of set II: in the majority of the instances in which one of the two forms belongs to set II - mostly the feminine - the opposite form belongs to set III (e.g. in some Torricelli Phylum languages such as Muniwara, Marienberg Family, Torricelli Phylum: na (set III) = *he*, wu (set II) = *she*) or sometimes to set I (e.g. in languages of the Sko phylum-level Stock and some Torricelli Phylum languages) which constitutes some of the exceptions mentioned in 2.3.3.2.3., 2). Only rarely does the masculine form belong to set

MAP 2 - DISTRIBUTION OF PRONOUNS, SET II FORMS



II and the feminine to another set, (e.g. in Bilua, Yele-Solomons-Wasi Stock, East Papuan Phylum: set I).

3) As has been mentioned in 2.3.3.2.2., 3), members of inclusive-exclusive pairs of 1pl. pronouns tend to belong to two different sets. Combinations of set II-set I and set II-set III are met with.

4) The characteristic base consonants of the set II pronoun forms are:

	sg.		pl.
1	k͡ʊg͡ʊŋg'͡ʊŋ	1	m'͡ʊp
2	m	2	m͡ʊp
3	b͡ʊp͡ʊw,ŋ		

The alternations of these consonants which, in some cases, can go beyond those indicated, are along the lines mentioned in 2.4.1.5.2.1.. They are commonly word-initial. As is the case with set I forms, forms with a vowel preceding them are met with in some areas (see 2.3.3.3.3.). Important basic forms of set II pronouns are:

	sg.		pl.
1	ka	1	me
2	ma	2	mi
3	ba͡ʊpi'͡ʊwa͡ʊmi		

2.3.3.3.3. *ARCHAIC FORMS*

Long and possibly fused forms of which the first element belongs to set II are very rare. For the few instances observed, much the same applies as has been stated in 2.3.3.2.3. with regard to such forms of which the first element belongs to set I.

As with set I forms, set II forms with initial vowel occur, with a distribution which matches the areas of the highest incidence of set II forms to some extent except that in the Trans-Fly area their incidence is weaker. It seems quite likely that these forms are archaic - they appear mainly in areas in which the set II forms can be assumed to have penetrated at a very early time such as the Vogelkop Peninsula and Torricelli Phylum areas (see 3.4.1.).

2.3.3.4. SET III

2.3.3.4.1. *DISTRIBUTION*

The third set which has been called set III, shows a distribution which bears some similarity to that of set II (see 2.3.3.3.1.): it is mainly in evidence in the northern part of the Vogelkop Pensinsula, the west of the Bomberai Peninsula, the neck-portion of Irian Jaya, the northern part of the non-peninsular eastern section of Irian Jaya, parts of the central north of the mainland, the Ramu Sub-Phylum (Sepik-Ramu Phylum) area, to a lesser extent than set II in the Torricelli Phylum area and neighbouring regions, though single occurrences are present in numerous languages there, in a number of areas in the Papua New Guinea Highlands and the south-east most of which are close to the points of significant occurrences of set II forms, in northern New Britain and New Ireland, and rather weakly in the Solomon Islands. However in contrast to set II, it shows an extremely strong occurrence in the Madang District, including its eastern part which is in the Trans-New Guinea Phylum area, as well as in an area stretching to the south of the western Madang District through the Highlands, especially the region occupied by the Central Family of the East New Guinea Highlands Stock, and beyond to the Papuan Gulf. At the same time, it is largely absent from the Trans-Fly area and south-eastern Irian Jaya which are major strongholds of set II.

On the Distribution Map of set III pronouns given below, the same principles have been followed as have applied to the map of set I forms (see 2.3.3.2.1.).

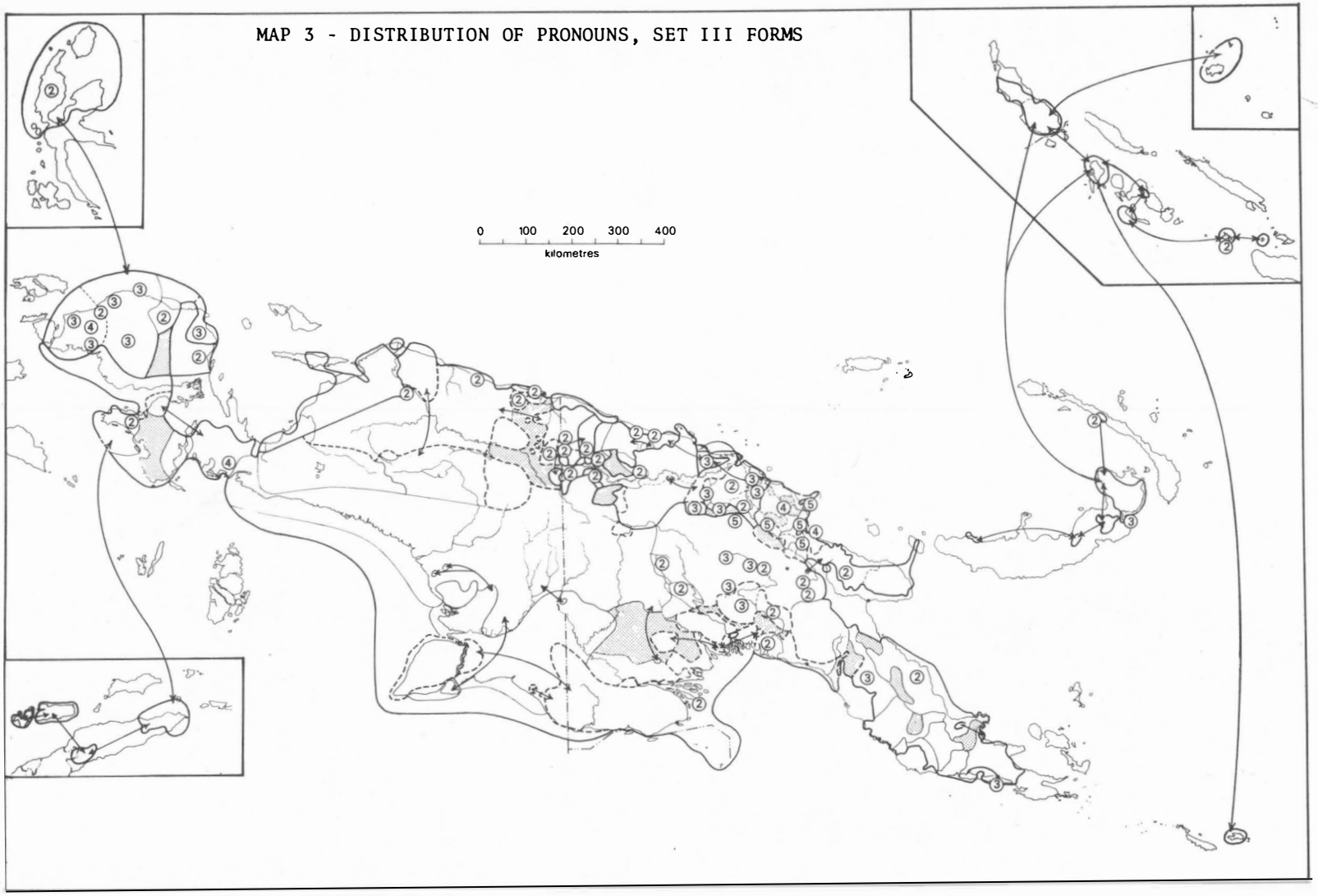
2.3.3.4.2. *CHARACTERISTICS*

Set III shows the following characteristics:

1) As has been mentioned in 2.3.3.3.2.,1), the feminine form in a masculine-feminine pair of 2sg. pronouns regularly belongs to set III when the masculine form belongs to set II. Exceptions to this situation - disregarding the cases in which both forms of such a pair belong to set I (see 2.3.3.2.2.,1)) are constituted by the very few instances in which the masculine form belongs to set III and the feminine form to set II or both to set III (which is the case in a few languages of the West Papuan Phylum).

2) It has been mentioned in 2.3.3.3.2.,2) that in the majority of the instances in which one of the two forms in a masculine-feminine pair of 3sg. pronouns - usually the feminine - belongs to set II, the

MAP 3 - DISTRIBUTION OF PRONOUNS, SET III FORMS



opposite form belongs to set III. In a few cases in which one is a member of set III, the opposite member belongs to set I (e.g. in some Torricelli Phylum languages), which constitutes some of the exceptions mentioned in 2.3.3.2.2.,2).

3) What can be mentioned concerning the occurrence of a member of set III in inclusive-exclusive pairs of 1pl. pronouns has largely been stated in 2.3.3.2.2.,3) and 2.3.3.3.2.,3). It remains to add that in a very small number of languages (e.g. languages of the Trans-Fly and Goilala Stocks, Trans-New Guinea Phylum), both members of such a pair belong to set III.

4) The characteristic base consonants of the set III pronoun forms are:

sg.		pl.	
1	t~d~y(~s)	1	(V)$\{^{k}_{g}\}$ ~ (V)$\left\{\begin{matrix} t \\ y \\ (s) \end{matrix}\right\}$
2	n~ñ		
3	n	2	nV$\{^{(g)}_{(k)}\}$

Again, the alternations of these consonants which, in some cases, can go beyond those indicated, are along the lines discussed in 2.4.1.5.2.1.. With the exception of the 1pl. forms, they are commonly word-initial. As in the case with the forms of sets I and II, forms with a vowel preceding them are met with in some areas (see 2.3.3.4.3.). Important basic forms of set III pronouns are:

sg.		pl.	
1	da~ta~ya	1	ki~ti
2	na	2	nik
3	nu		

2.3.3.4.3. *ARCHAIC FORMS*

Long and possibly fused forms (see 2.3.3.2.3.) of which the first part belongs to set III occur in a small number of instances. Considerations similar to those applying to such apparently fused forms of which the first element belongs to set I (see 2.3.3.2.3.) may hold for them, and indeed, in the far west of the New Guinea area, in assumed contact regions between migrations believed to have been carrying pronoun forms of different sets (see 3.4.1.) such as the Vogelkop and Bomberai Peninsulas, some apparently fused pronoun forms are found of which the first part belongs to set III: fused forms whose first part belongs to sets I or II are extremely low in number in those areas.

As with sets I and II, set III forms with initial vowel occur though their incidence is of a rather low order. Their distribution is somewhat unexpected: they occur very largely outside the areas of the main concentration of set III forms as a whole, except for the eastern part of the Madang District and an area south of the western Madang District. This is in part complementary to the distribution of comparable forms of set II (see 2.3.3.3.3.) which may have some significance in the light of what has been said below in 2.3.3.4.4. about the special, possibly non-original, nature of set III. If the numerically rather insignificant set III forms with initial vowel are regarded as archaic which they probably are, their unexpected distribution may perhaps be explained in terms of their constituting an early phonological innovation carried by an early migration which separated from the main area of the set III forms in the west and migrated to the east, to be followed subsequently by the non-innovated forms carried by the eastward migration of the main body which pushed the innovated forms into fringe areas.

2.3.3.4.4. *THE SPECIAL NATURE OF SET III FORMS*

There are a few aspects inherent in the nature and distribution of the pronoun forms of set III which suggest that the forms constituting this set and in consequence, the set itself, are in part derived from the same original forms as members of set II, and in part directly derived from set I. The following facts are of interest in this respect:

1 sg.: In spite of the strong presence of set II forms in the northern part of the Vogelkop Peninsula which is also an area of major occurrence of set III, set II forms of the 1sg. pronoun are totally lacking in that area, whereas set III forms are very strongly in evidence. In languages there in which several of the pronouns belong to set II, the 1sg. pronoun usually belongs to set III. The characteristic base consonant of set II is k, and the main variant of set III is t: in 2.3.2.1. it has been pointed out that the interchangeability of these two consonants is a rather general Papuan characteristic, and it has been found to play an important part in reconstruction work (see 2.4.1.5.3.1.). In view of this, it may well be justifiable to postulate an original 1sg. form with *ć- (see 2.4.1.5.3.1.) from which the k- and t- forms of sets II and III developed, with the emergence of k taking place only east of the Vogelkop.

3 sg.: In western languages with gender distinction, e.g. in the Northern Halmahera (West Papuan Phylum) languages as well as in old languages elsewhere, i.e. the Torricelli Phylum languages, the 3sg.m. pronoun has n and the 3sg.f. one a labial (m, w) as the characteristic base consonant which may well be regarded as an original situation. As a result of the impact of the non-gender Trans-New Guinea Phylum languages upon older languages (see 3.4.1.) many such languages appear to have lost their gender distinction, and one of the two, i.e. masculine or feminine, 3sg. pronoun forms became the sole 3sg. pronoun - the masculine form a member of set III and the feminine form one of set II. Some non-gender languages (e.g. Binanderean Family Languages, Binandere Stock; Awyu, Central and South New Guinea Stock; Kwale, Kwalean Stock - all three members of the Trans-New Guinea Phylum) have two 3sg. pronoun forms belonging to sets II and III, and some have forms which are fused from an original masculine and a feminine form (see 2.3.3.9.).

2 sg.: Similar considerations as have been mentioned above with regard to the 3sg. pronouns may be possible in the case of the 2sg. pronouns in the light of the fact that in some languages with gender distinction in the 2sg. (e.g. languages of the Middle Sepik Stock, Sepik-Ramu Phylum), the masculine form belongs to set II, and the feminine one to set III.

1 pl. (and 2 pl.): In spite of the strong presence of set III pronouns in the northern part of the Vogelkop Peninsula, 1pl. pronoun forms of this set are almost absent from that area and they are rare in adjacent areas and in the northern part of the non-peninsular eastern section of Irian Jaya. This indicates that they are likely to be a later development. Their forms and the strong occurrence of k~g as their characteristic base consonant suggest a connection with apparent sets I + III fused forms which are found in south-eastern Irian Jaya, a typical area of interaction between different strata (see 3.4.1.), as well as in the Gulf and Huon Peninsula areas and in the north of the south-eastern tail-end of the mainland: areas into which migrations from the central southern 'interaction region' are assumed to have directly penetrated. The shape of these apparant fused forms (nok, nage, etc.) and the presence in parts of the same areas, of 2pl. pronouns in very similar forms (nigo, nige) which may well be the result of the fusion of 2sg. set III n- + 2pl. set I k- resulting from the interaction of sets I and III in an area south-east of the Vogelkop, may suggest an origin of the 1pl. set III k~g from a confusion between 1pl. and 2pl. forms in contact

situations: a phenomenon observable in other parts of the New Guinea area such as the Sepik region.

2.3.3.5. SET Ia

One of the two subsets mentioned in 2.3.3.1. constitutes a subset to set I and differs from the latter only in the 2sg. in having the base consonant t∿d∿r∿(s) instead of k and its variants, with an important basic form being te.

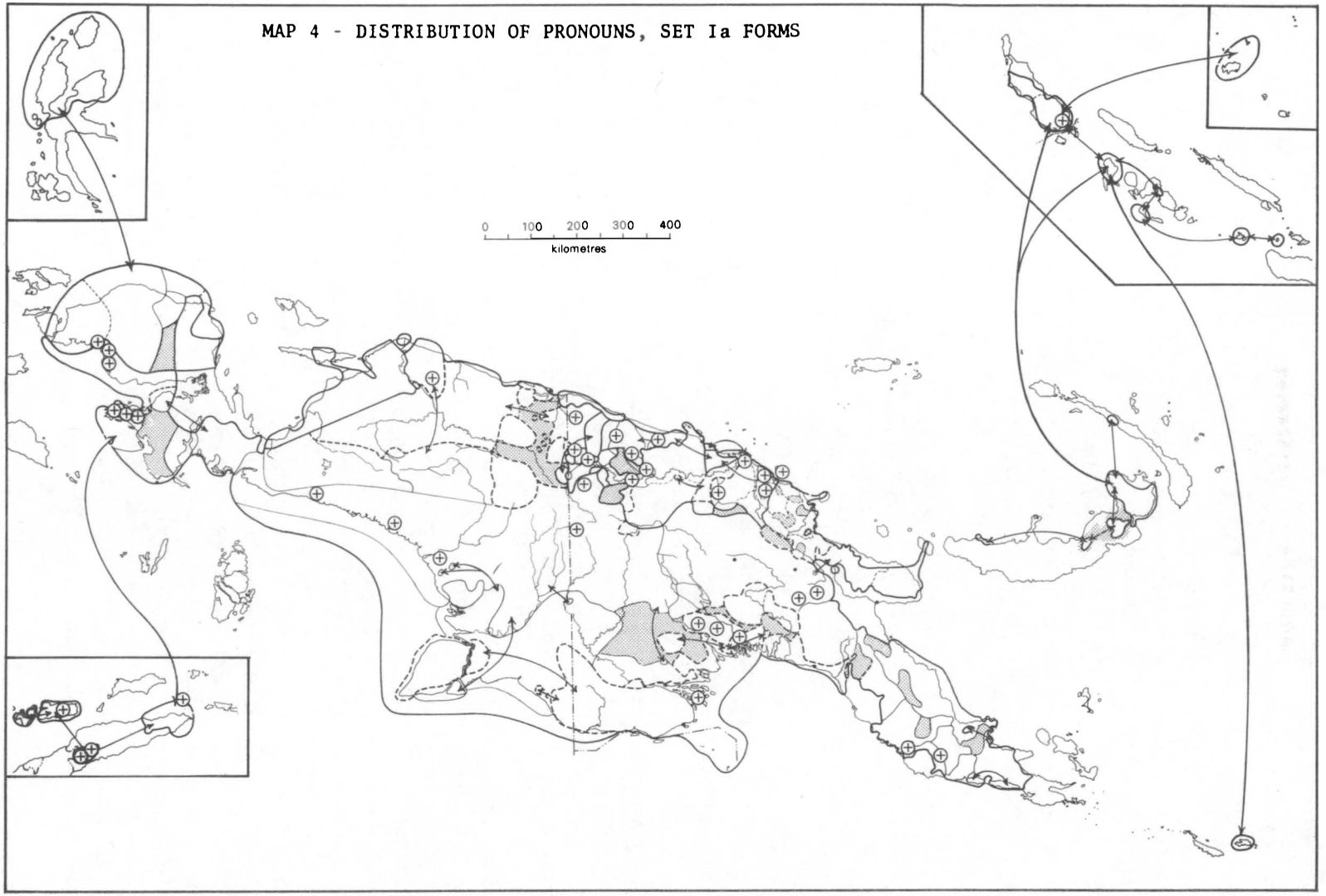
It seems likely that the base consonants of 2sg. set I: k∿g∿ŋg and set Ia: t∿d∿r∿(s) are derived from *ć (see 2.3.3.4.4.). It is noteworthy in this connection to consider that the distribution of set Ia bears some relationship to that of points which the early, west to east, Trans-New Guinea Phylum migration is assumed to have reached and passed through (see 3.4.1.), i.e. the Timor-Alor area, the south coast of the Vogelkop Peninsula, the Bomberai Peninsula, the south-western part of the non-peninsular portion of Irian Jaya, the central part of the mainland, the central north and the Sepik Districts area adjacent to it in the east, the inland area of the Gulf District, the area to the south of the Upper Markham River, and southern parts of the south-eastern tail portion of the mainland. It is also met with in the region immediately to the north of the central part of the mainland which is thought to be an area of penetration by the late, east-to-west, Trans-New Guinea Phylum migration (see 3.4.1.). There is some evidence that the Trans-New Guinea Phylum migration into that area has penetrated there from the central part of the mainland and in the course of this has apparently carried set Ia forms from that area northwards.

As is the case with set I forms, there are set Ia forms with initial vowel - probably archaic forms. They occur in the western areas of occurrence of set Ia, as well as in the northern areas.

On the Distribution Map of set Ia pronouns given below, the presence of a set Ia form of the 2sg. pronoun in given languages has been marked by +. As has been the case with maps 1-3, one language has been chosen in many instances to represent a cluster of adjacent languages.

2.3.3.6. SET x

The second subset mentioned in 2.3.3.1. constitutes a subset to all the sets mentioned so far and is characterised by the appearance of special forms of the pronoun forms belonging to those sets. The


MAP 4 - DISTRIBUTION OF PRONOUNS, SET Ia FORMS
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characteristic features of these special forms are as follows:

1sg.: wV- before the n of set I, e.g. wan
i instead of a in set II, e.g. ki

2sg.: i instead of a in set I, e.g. ki, aŋgi
-y in set II, e.g. pay
the variant y+i in set Ia, e.g. yin
(wu- before the n of set III, e.g. wune in Kwomtari (Kwomtari phylum-level Stock), but this may be due to the interchangeability of pronouns in many Sepik-Ramu Phylum languages (see 2.3.2.5.)) from which this particular Kwomtari pronoun has quite obviously been borrowed).

3sg.: -n with set II, e.g. mən (the assignment of this feature to set x is doubtful and 3sg. forms in -n may constitute ordinary variants of set II forms)
(wu- with set III, but this may, in the few instances of its occurrence in the Sepik District, also be attributable to what has been stated above under 2sg.).

1pl.: yi- or -m with set I, e.g. yin, nom
-i after p with set II, e.g. epi

2pl.: yi-~yu before the base consonant of set I, e.g. yuko
yi-~yu before the base consonant of set II, e.g.yipi

The appearance of special forms of the kind discussed above would in itself not constitute a very unusual phenomenon justifying the establishment of a separate set. The presence of single occurrences of such special forms in the pronoun range of a given language which is infrequent and encountered especially in the northern Vogelkop, the Irian Jaya and Papua New Guinea Highlands, the centre of the mainland, the Trans-Fly area, the Madang District, the Huon Peninsula, the southern part of the south-eastern tail portion of the mainland, and northern New Britain may therefore have perhaps no special significance (but see below and 2.3.3.8.) though these points coincide to some extent with the route of the assumed west-to-east Trans-New Guinea Phylum migration. However, the high concentration of multiple occurrences, in individual languages, of set x forms in a geographically contiguous region in the Sepik Sub-Phylum (Sepik-Ramu Phylum), Torricelli Phylum and the northern central Trans-New Guinea Phylum area adjoining the latter in the south-west is undoubtedly significant, and very probably attributable to the influence of a substratum in the area which antedates the appearance of both the Sepik-Ramu and Trans-New Guinea Phyla migrations into it (see 3.4.1.). At the same time, the distribution of single occurrences may have some importance in the light of the some-

what similar, though more restricted, distribution of unclassifiable pronoun forms (see 2.3.3.8.).

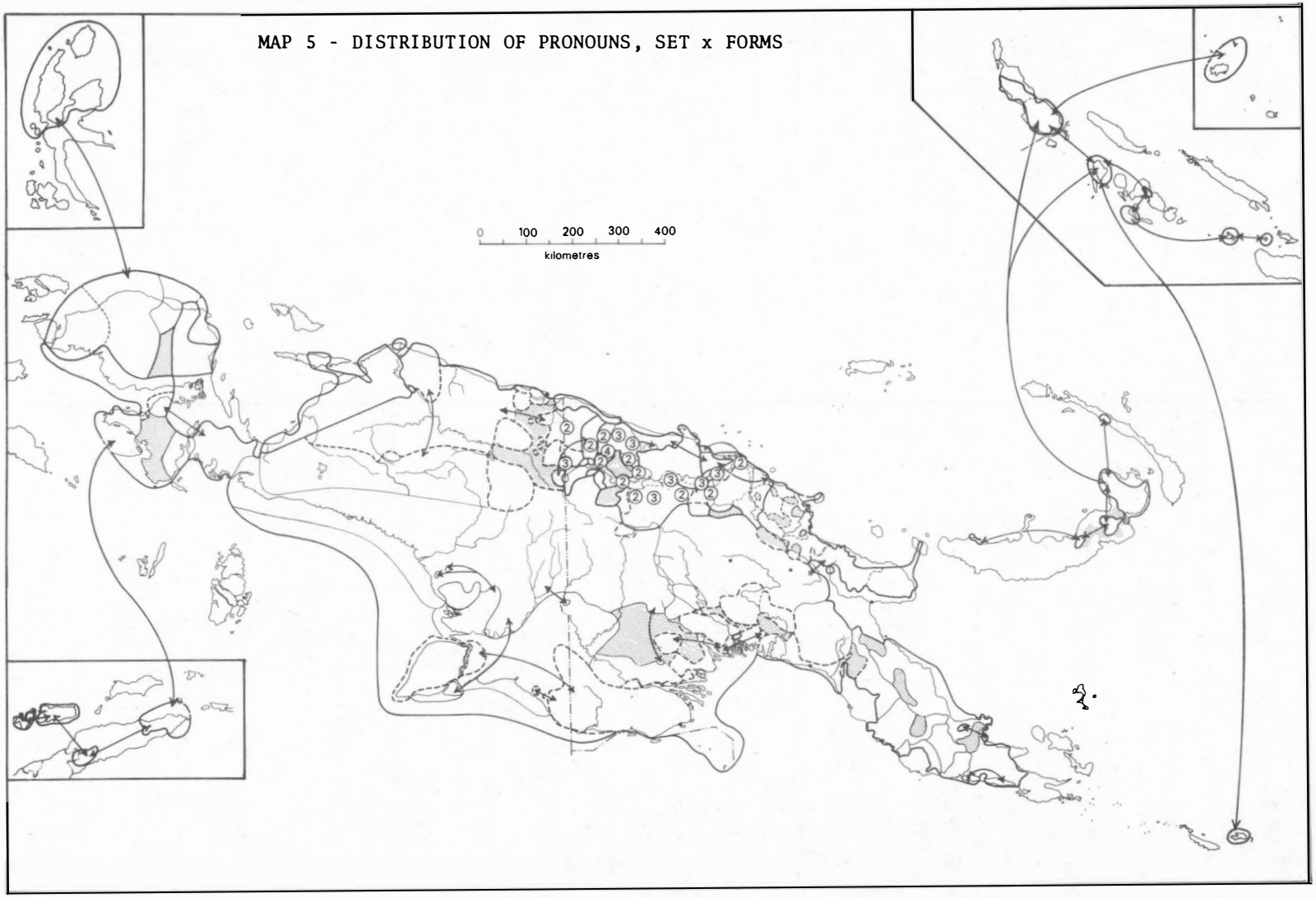
On the Distribution Map of set x pronouns given below, the same principles of presentation have been adopted as have applied to the map of set I forms (see 2.3.3.2.1.).

2.3.3.7. SET B

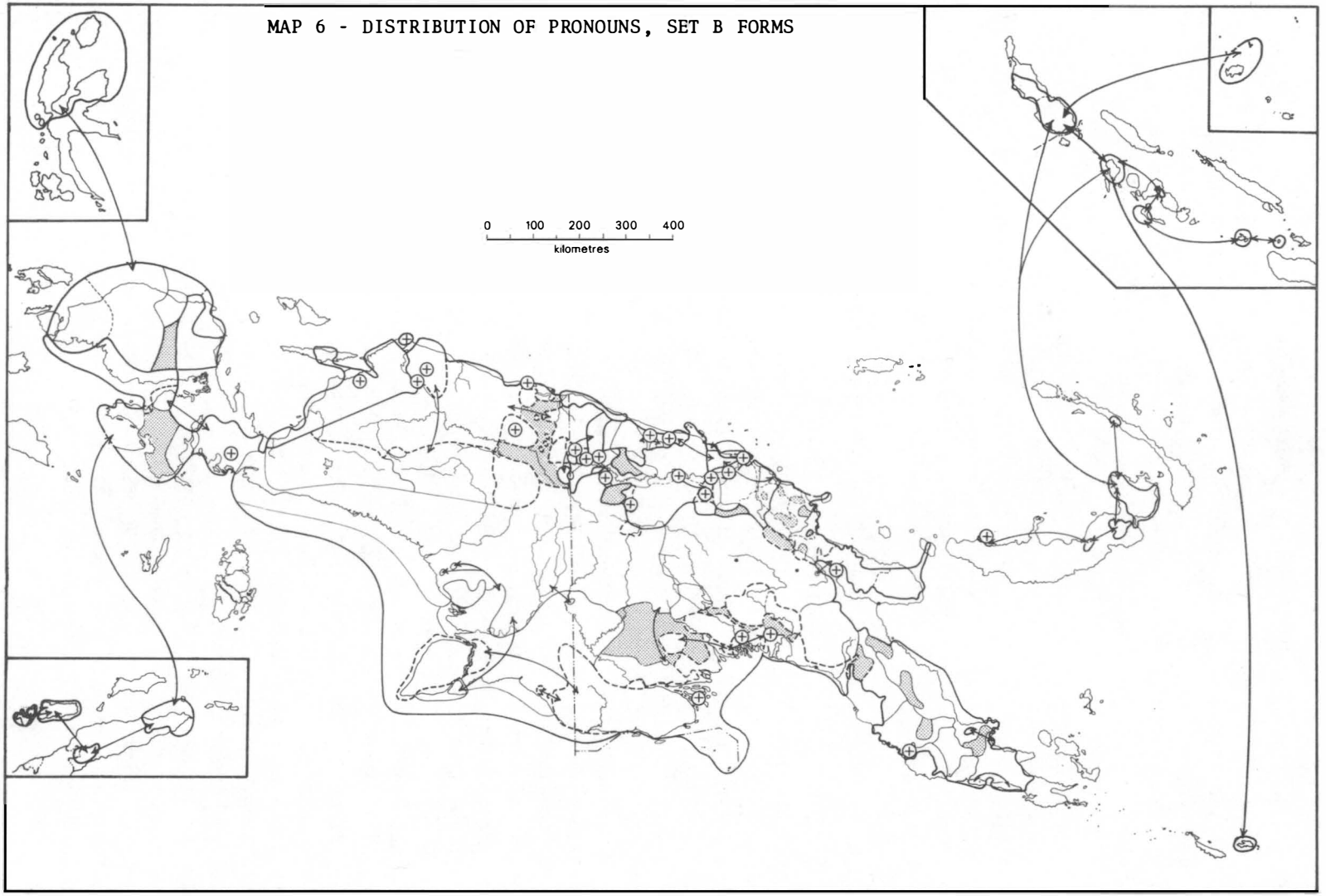
The small set manifesting itself only in the form of the first person singular which was mentioned in 2.3.3.1. shows a regional distribution which strongly indicates that it constitutes a sub-stratum feature which antedates the penetration of the Trans-New Guinea and Sepik-Ramu Phylum migrations into some parts of the New Guinea area. It is, to a considerable extent, a feature of languages not belonging to these two large phyla, e.g. of languages of the Torricelli Phylum, the Left May phylum-level Family, of some of the Upper Sepik Isolates, the Wasembo (or Gusap) Isolate in the Upper Markham River area, the Porome Isolate in the Gulf District, and of Anem in south-western New Britain, a member of the East Papuan Phylum. It also occurs in the Sepik-Ramu Phylum in languages of the Leonhard Schultze and the Lower Sepik (Nor-Pondo) Sub-Phyla, and not far from these areas, in the Senagi Sub-Phylum of the Trans-New Guinea Phylum. However, the languages of these three sub-phyla are highly aberrant and contain very strong substrata, and it seems likely that the presence of set B in them is attributable to this substratum. More isolated occurrences of it have also been observed in the south of the south-eastern tail portion of the mainland, in the Trans-Fly area, in the north-western part of the Trans-New Guinea Phylum in northern Irian Jaya and in the Warenbori and Boromeso Isolates located in that region near the Mamberamo, in the mainland portion of the Geelvink Bay Phylum and in the Mairasi-Tanah Merah Stock of the Trans-New Guinea Phylum in the 'neck' portion of the Vogelkop Peninsula in Irian Jaya.

On the Distribution Map of set B pronouns given below, the presence of a set B form of the 1sg. pronoun in given languages has been marked by +. The principles adopted for map 4 (set Ia pronouns, see 2.3.3.5.) apply to this map as well, though in view of the relative rarity of the occurrence of set B, cases in which one language represents a cluster of adjacent languages are not common.

MAP 5 - DISTRIBUTION OF PRONOUNS, SET x FORMS



MAP 6 - DISTRIBUTION OF PRONOUNS, SET B FORMS



An important basic form of set B is bo∿mo (∿po∿wa).

A remarkable feature of set B is the fact that it occurs in a number of unrelated languages within one given area in the Sepik Districts, and in other unrelated languages in other parts of Papua New Guinea and Irian Jaya. While its presence in the Sepik District can be explained as reflecting a substratum in spite of the somewhat discontinuous nature of its area of occurrence (this fact is perhaps understandable in terms of the assumed Sepik-Ramu Phylum migration - see 3.4.1.), its presence in widely separated unrelated languages as well as in areas at and near the fringes of the Trans-New Guinea Phylum constitutes a problem. It may perhaps be indicative of some kind of wider connection between pre-Trans-New Guinea Phylum and pre-Sepik-Ramu Phylum languages in the New Guinea area (see 3.4.1.).

2.3.3.8. UNCLASSIFIABLE PRONOUN FORMS NOT BELONGING TO THE SETS DISCUSSED

There are some pronoun forms in individual languages which do not fit in with any of the various sets discussed so far. Their total number is very small, and their presence exceeds single occurrences per language in only very few instances, e.g. in languages of the Eleman Sub-Phylum of the Trans-New Guinea Phylum.

The distribution of these forms bears some similarity, in a greatly reduced form, to that of those of set x forms (see 2.3.3.6.): their highest concentration is in the Sepik Sub-Phylum (Sepik-Ramu Phylum) and Torricelli Phylum areas, though they are absent from the northern central Trans-New Guinea Phylum area adjoining the latter in the south-west. Their distribution agrees with that of single occurrences of set x forms (see 2.3.3.6.) in the appearance of unclassifiable forms in some very few languages in the Irian Jaya and Papua New Guinea Highlands and the Trans-Fly area, but such forms are absent from the Huon Peninsula, the northern Vogelkop, the centre of the mainland, the Madang District, the southern part of the south-eastern tail portion of the mainland and northern New Britain in which single occurrences of set x forms have been observed. They are however quite strongly met within languages of the Eleman Sub-Phylum of the Trans-New Guinea Phylum, in the Gulf District.

In the light of this, it seems possible to see in the distribution of such unclassifiable pronouns some further indication, as manifested in pronoun forms, of the existence of pre-Trans-New Guinea and Sepik-Ramu Phyla substrata in the Papuan languages, in addition to what has been said in 2.3.3.7. about set B pronouns.

On the Distribution Map of unclassifiable pronouns given below, the occurrence of such pronoun forms in given languages - mostly only one per language - has been indicated by +. The principles adopted for map 4 (set Ia pronouns, see 2.3.3.5.) have been applied to this map, but because of the rarity of the occurrence of unclassifiable pronoun forms, cases in which one language represents a cluster of adjacent languages are rare.

2.3.3.9. PARALLEL OCCURRENCES OF PRONOUNS OF DIFFERENT SETS, AND FUSED FORMS

As has been pointed out in 2.3.3.4.4., several non-gender languages have two distinct 3sg. pronoun forms which formally correspond to the masculine and feminine 3sg. pronouns of some of the gender languages. This situation appears to be the result of the impact of the non-gender Trans-New Guinea Phylum languages upon earlier languages with gender distinction.

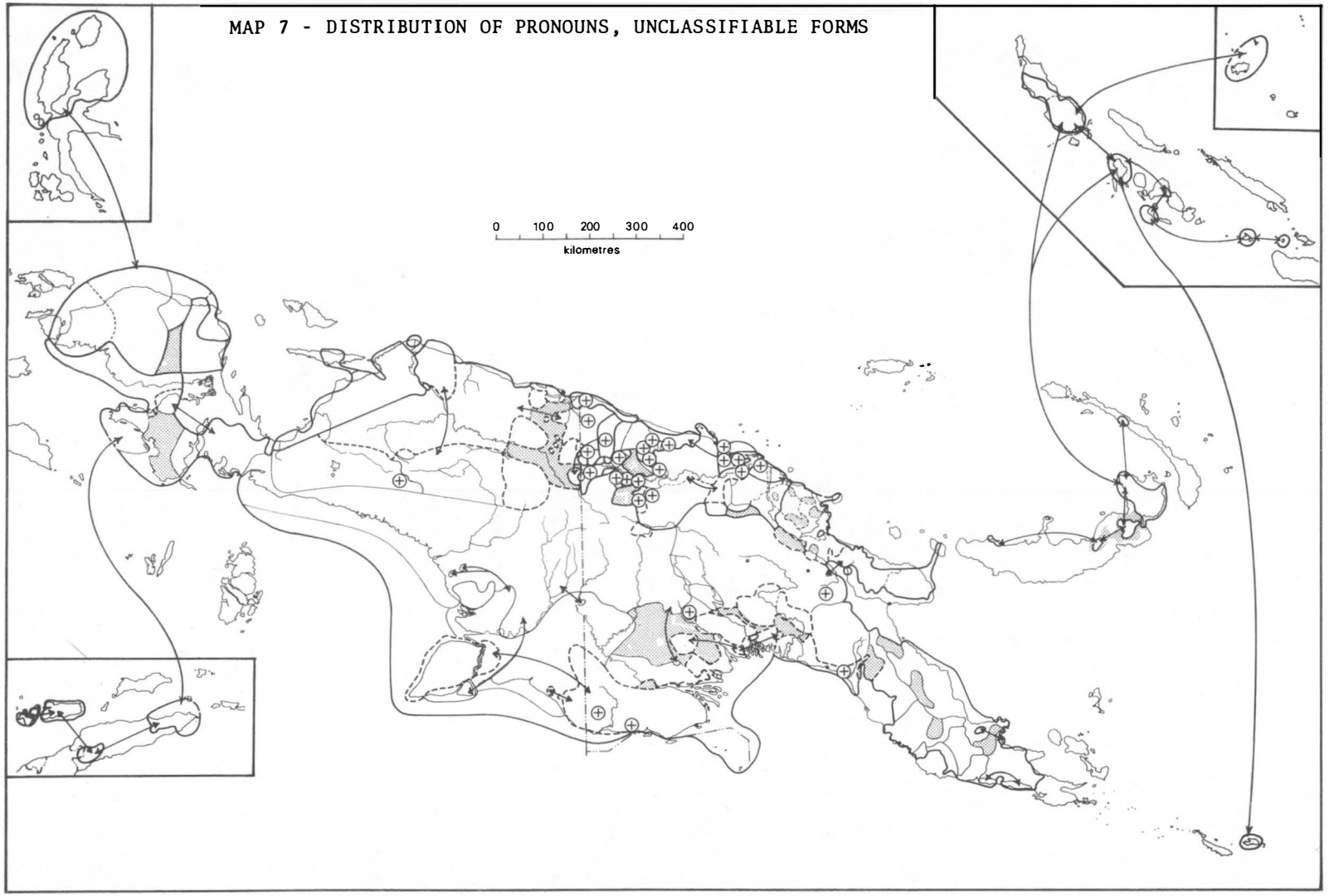
Another comparable situation is observable for instance in the aberrant Trans-New Guinea Phylum languages of the Trans-Fly area in which the pronouns belong largely to set II, whereas the bound object person markers with verbs belong predominantly to set I.

A further development from such situations is the appearance, as already mentioned in 2.3.3.2.3., 2.3.3.4.4. and elsewhere, of long pronoun forms which seem to be fused forms composed of pronominal elements originally belonging to two different sets.

Of particular interest among these are 3sg. forms in non-gender languages which appear to be the result of the fusion of 3sg.m. and 3sg.f. forms in two-gender languages. In 2.3.3.4.4., the taking over of either the masculine or the feminine 3sg. form of two-gender languages by non-gender languages has been mentioned: the fused 3sg. forms in the latter type of languages seem to reflect a situation in which both the masculine and feminine forms were adopted, and fused into a single form. A good example of this is Wabuda (Trans-Fly Stock, Trans-New Guinea Phylum), 3sg. **nuabu**: sets III (**nu-**) + II (**-abu**), with **nu-** a set III 3sg.m. form observed in gender languages and **bu** a set II 3sg.f. form in gender languages.

Such apparently fused 3sg. forms reflecting masculine and feminine forms encountered in other two-gender languages are also met with in gender languages, e.g. Marind (Marind Stock, Trans-New Guinea Phylum), 3sg.m. **anep**: sets III + II. Another fused form in a gender language is for instance Kayik (Wapei-Palei Stock, Torricelli Phylum)

MAP 7 - DISTRIBUTION OF PRONOUNS, UNCLASSIFIABLE FORMS



3sg.m. təno: sets I + III.

A few examples may be given of what seem to be comparable fused forms of other persons and which are possibly composed of pronoun forms originally belonging to different sets:

1sg.: Kamoro (Central and South New Guinea Stock, Trans-New Guinea Phylum) noro (I + III); Marind (Marind Stock, Trans-New Guinea Phylum) nok (I + II)

2sg.: Telefol (Central and South New Guinea Stock, Trans-New Guinea Phylum) kab (I + II); Daribi (Mikaru) (Teberan stock-level Family, Trans-New Guinea Phylum) nagi (III + I(x))

1pl.: Yenimu (Central and South New Guinea Stock, Trans-New Guinea Phylum) nugu (I + III); Korafe (Binandere Stock, Trans-New Guinea Phylum) nama(ne) (I + II); Kiwai (Trans-Fly Stock, Trans-New Guinea Phylum) nimo (I + II)

2pl.: Zia (Mawai dial.)(Binandere Stock, Trans-New Guinea Phylum) nige (III + I); Kiwai (Trans-Fly Stock, Trans-New Guinea Phylum) nigo (III + I)

In some languages, the second part of individual pronoun forms may constitute function suffixes which may however well be derived from full pronoun forms in the light of what has been said above.

The areas of occurrence of apparently fused pronoun forms predominate in the centre and the eastern half of the mainland and its general central and southern area, with the Sepik Districts region also showing a fairly high concentration. Some of the areas in which they have been observed coincide with those of assumed contact regions between the migrations believed to have been carrying pronoun forms of different sets (see 3.4.1.), such as the southern part of the Vogelkop and adjacent regions, the central southern area of the mainland and the western part of the Sepik Districts and adjacent areas. They are also met with in areas such as the Huon Peninsula-Finisterre region and the northern part of the south-eastern tail portion of the mainland, into which migrations from the southern central contact area are assumed to have directly proceeded (see 3.4.1.).

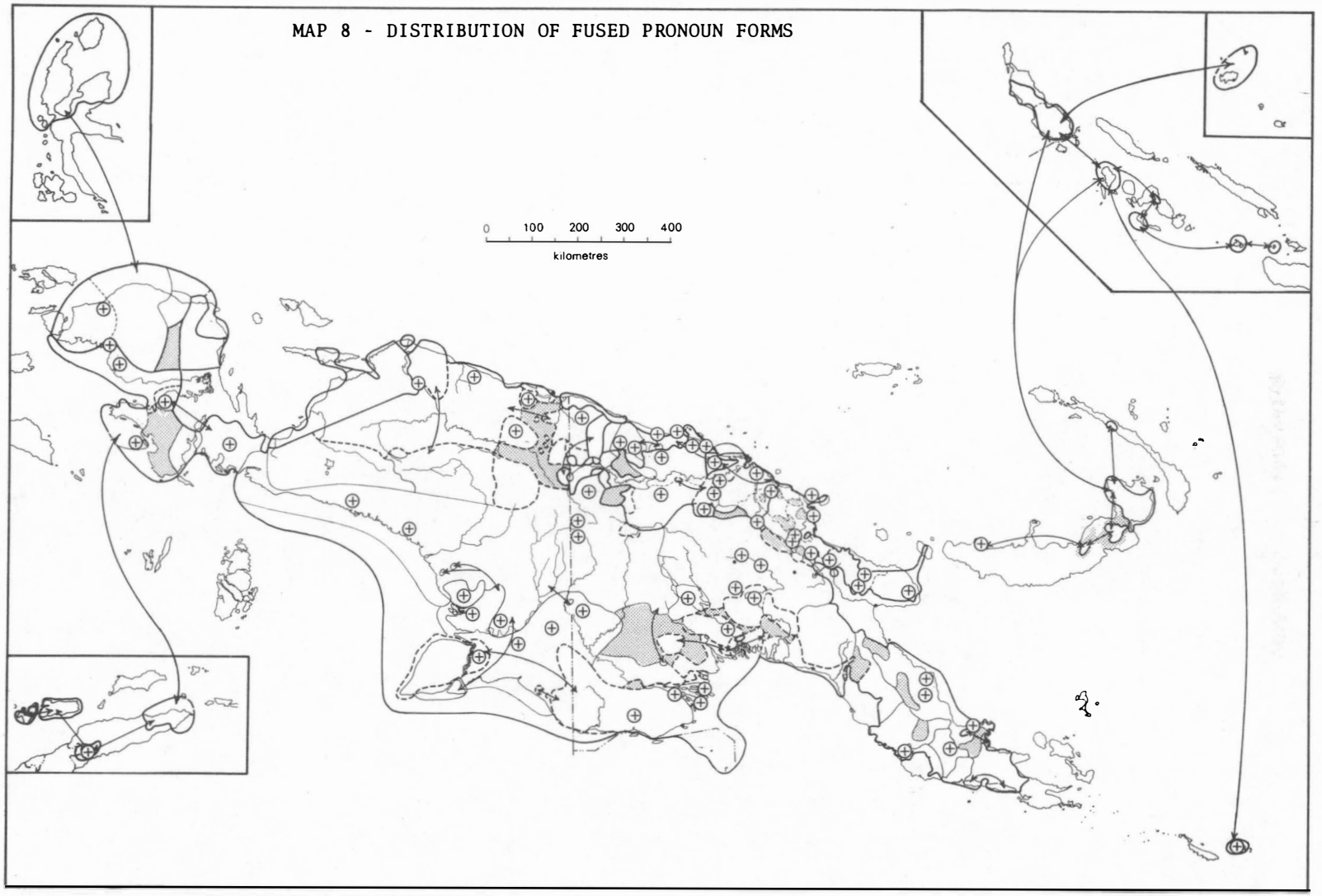
On the map given below, the presence of fused pronoun forms, and of parallel occurrences of pronouns of different sets in 3sg. in non-gender languages, has been shown. The occurrence of such a form or forms has been marked by +. The principles adopted for map 4 (set Ia pronouns, see 2.3.3.5.) apply to this map as well.

2.3.3.10. CONCLUDING REMARKS

From the discussion given above it is clear that no simple one-to-one correspondence exists between the various pronoun sets found in Papuan languages and the established groups of probably interrelated languages. It has been observed that the bulk of the Trans-New Guinea Phylum languages contains a concentration of pronoun forms of set I, and it has been mentioned in 2.3.3.2.1. that the appearance of set I forms can be looked upon as a typical Trans-New Guinea Phylum characteristic, though the occurrence of this set is not limited to Trans-New Guinea Phylum languages. At the same time, many Trans-New Guinea Phylum languages, especially those of certain predominantly marginal and subphylic areas, contain a varying, sometimes quite high, number of pronoun forms of sets II and III. Both these sets, as well as set I, are strongly in evidence in the various unrelated phylic groups in the Sepik Districts, and are also encountered in the West Papuan and East Papuan Phyla. Sets x and B appear to be substratum features and are present in a number of unrelated phylic groups, predominantly in the Sepik Districts area.

The fact that a large number of Papuan languages, predominantly languages showing a preponderance of set II pronouns, distinguish two genders in the third - sometimes also the second - person singular, further complicates the picture: if gender distinction is indicated in languages with 3sg. set I pronoun forms, it is usually only denoted by a vowel change in those forms. However, in languages in which the 3sg.m. pronoun belongs to another set, the 3sg.f. pronoun tends to be a member of another set again.

In many cases, the 3sg. pronoun forms in non-gender languages show formal similarity to masculine or feminine 3sg. pronouns in gender languages and may have been taken over from them. A number of non-gender languages show two parallel 3sg. pronoun forms which formally resemble 3sg.m. and 3sg.f. forms in gender languages; others, including gender languages, show 3sg. pronouns as well as other pronouns which seem to be fused forms composed of elements similar to 3sg.m. and 3sg.f. pronouns in other languages, and to pronouns of different sets. The


MAP 8 - DISTRIBUTION OF FUSED PRONOUN FORMS
0 100 200 300 400
kilometres

occurrence of such forms shows some parallelism with the occurrence of mixed typological features which is in line with the fact that some correlation appears to exist between the presence of certain typological characteristics and of pronouns of certain sets as set out above in 2.3.2.2.

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2.3.4. OBSERVATIONS ON NUMBER SYSTEMS AND SEMANTICS

D.C. Laycock

2.3.4.1. NUMBER SYSTEMS

Number systems can be studied as philosophical systems in their own right, or as guides to ethnic thinking on number concepts. What is clear, however, is that number systems, at least in the New Guinea area, afford few indications of genetic relationship of languages; closely-related languages may show widely-differing systems. The ease with which number systems as a whole may be borrowed can be seen in non-Austronesian languages such as Miriam (Torres Straits), which as early as 1898 had begun to adopt English numerals (Ray 1907:86), and which nowadays uses Motu numerals (in place of the original binary system). Other languages, such as Yele (Rossel Island) use numerals borrowed from neighbouring Austronesian languages almost in their entirety.

The number systems of the New Guinea area have been discussed in two extensive (and rare) publications by Kluge (1938, 1941), and more briefly by Schmidt (1929), as well as in the various publications cited below. Wolfers (1969) also has a valuable unpublished paper on the subject, which was kindly made available to the author by the Institute of World Affairs. In this paper, however, examples are taken from primary rather than secondary sources, including a number of recent publications.

Firstly one must distinguish between true 'number systems' and 'tally systems'; the latter are used only for direct counting, or 'mapping' of a set of objects against some other measuring code. There are no 'numerals' in a tally system, so that one may not receive a reply to the question 'how many?', or find the points of the tally-system qualifying nouns, as do true numerals. The typical tally-systems of languages of the New Guinea area are the 'body-parts' counting systems. All such systems recorded behave in similar ways. Counting begins on the fingers

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- usually those of the left hand, and commencing with the little finger (but see below for exceptions) - with the index of the other hand being used as a pointer; counting continues up the arm and across the top half of the body, each point in the system being an identifiable 'body-part'. In almost all recorded systems, there is a central point (usually the top of the breastbone, or the top of the nose-ridge), after which counting continues down the other side, duplicating the points already named (usually with a marker indicating *second* or *again*); this means that most systems culminate in an odd number. (The exceptions are discussed below).

Aufenanger (1938), describing the Gende system, pointed out that named 'body-parts' from the lower half of the body do not occur: 'Andere Körperteile, z.B. die Beine, Füsse, oder Zehen, werden nie in die Zahlenreihe mitaufgenommen'. The 'lowest' point recorded appears to be *navel*, given by Ray (1907:86) as point *14* in a system whose total is *29*. However, there are a number of discrepancies in this data which make its evidence doubtful. Firstly, the system has **three** central points: *14... navel*; *15... top of chest*; *16... front of throat* - a schema which seems unlikely. Secondly, the order skips backward at points *10* and *11*, in that *10... shoulder* is given before *11... armpit*, while on the right side the same order is followed (instead of the mirror-image order) for *19... shoulder* and *20... armpit*. Thirdly, a second informant gave a different system, with a total of *25* (omitting the points *7... back of wrist* and *9... [outside] elbow* of the first informant) and reversing the order of a number of other points. Accordingly the Miriam evidence should not be used to counter the general statements on body-parts systems in the New Guinea area. (Current Miriam evidence is lacking, as the system is no longer in use).

The lack of occurrence of named points on the lower half of the body led Laycock (1970a, 1970b) to express the view that the 'body-parts' tally systems are related to the measurement of rope-like objects such as shell-money or rattan, where one end is held in the left hand, while the other hand stretches the length to obvious tally-points such as (inner) elbow, shoulder, top of breastbone, and finally to the extended arm-span; the western equivalents of such units are the 'cubit', and 'ell', and the 'fathom'. A number of named tally-points, used in the counting/measuring of shell-money, have been collected for the Buin language (Laycock 1976), and probably exist in many other languages of Melanesia.

The highest 'number' reached in any body-parts system is *47* (Kewa:

Franklin and Franklin 1961); other established totals are *37* ('Kutubu' (Foe): Williams 1941); *31* (Gende: Aufenanger 1938); *27* (Telefol: Kienzle and Campbell 1938, Kirschbaum 1938; 'Elema' (Orokolo): Ray 1907; Sibil: Galis 1960; Namau: Chalmers 1897, Ray 1907); *23* (Maramuni Enga: Kirschbaum 1938; Yuri, Anggor: Laycock - fieldnotes), *19* ('Jibu' (Gidra), 'Kunini' (Bine): Ray 1907). Franklin and Franklin (1961) also report totals of *23* for Dumut Mandobo, and *15* for Pole; Ray's (1907) doubtful totals of *29* and *25* for Miriam have been mentioned above. Even-number totals include *18* for 'Bugi' (Nambu) (on one interpretation of Ray's (1907:296) somewhat doubtful data) and for Awyi (Galis 1960) and Baibai (Laycock - fieldnotes), and a reported *14* for Huli and Duna (Franklin and Franklin 1961). The *18*-total systems are identical with that of Gidra (*19*-total), with the central point (top of breastbone) omitted.

The starting point of most systems is the left little finger; Galis (1960) records a starting point on the right side, but he notes the case as exceptional: 'Vermoedelijk moet de telling beginnen bij de linkerpink, zoals elders; dit is een kwestie van "aanzien" door de beschouwer'. Kirschbaum (1938) reports that his sole informant for Maramuni Enga also started on the right hand. The left thumb is given as the starting point for the Hewa system described by Steadman (1971:24). The Hewa system is unusual in other ways also; basically it is a *27*-total system identical with that of Orokolo, but the system can be extended to a total of *49* by continuing back up the right side, and down the left side, ending at the left thumb. Three sets of prefixes identify the point reached in the system; the names for the first (left) side are unmarked.

A further difference among systems is the question of symmetry. Some systems are asymmetrical, in that the fingers on both right and left hands are always counted in the same order (usually little finger to thumb, but reversed in Hewa): so recorded are Hewa, Awji, Sibil, and Gende. The symmetrical systems (beginning and ending on the little finger) are, as far as is recorded, Kutubu, Orokolo, Yuri, Anggor, Gidra, Miriam, and Baibai (sources as above).

In spite of such minor differences between body-parts systems, it is evident on comparison of them that they all relate to each other, and perhaps derive from a single source. Table I compares the best-documented systems, as treated in this essay; it will be seen that essentially the same-body-parts are selected, and systems with lower totals simply omit certain points. (The names for the body-parts used are not always those of the sources, but are believed to refer to approximately the same points).

It seems common for languages with body-parts tally-systems to possess a numeral system as well, often binary (so Miriam (Ray 1907), Namau (Chalmers 1897 and Ray 1907), and Gende (Aufenanger 1938), but also ternary, as in Hewa (Steadman - personal communication), quaternary, as in Kewa (Franklin and Franklin 1961) and quinary, as in Abau (Laycock - fieldnotes). Probably all languages with tally-systems still require at least two true numerals, although in some of them the first five points of the tally-system, which are invariably finger-names, may serve this function.

The true numeral systems of languages of the New Guinea area have been called various names, many of them inaccurate. It seems that we have to recognise the terms binary, ternary (trinary), quaternary, quinary, senary, decimal, and vigesimal - but rarely as descriptions of complete number systems. The majority of number-systems in the New Guinea area are mixed in various ways.

Taking the 'pure' systems first, we have the widespread binary (or 'Australian') system, where only the first two numerals are expressed by separate roots; higher numerals are compounded from these, as 2+1 (3), 2+2 (4), 2+2+1 (5), and so on. Counting in such systems rarely exceeds seven, unless the system is a mixed one in which an expression for *ten* or *twenty* occurs.

Unmixed ternary systems are rare or non-existent; but Lyle Steadman (formerly Australian National University - personal communication) obtained three root numbers in Hewa - *1* tabak^{h}ali, *2* yiya, *3* yumilia - and was unable to find higher numbers of any kind (apart from the body-parts system described above). Nevertheless, I would be inclined to suspect that the system is really quinary (as in other languages of the Sepik Hill Family) and that communication difficulties prevented the eliciting of at least one more root numeral, that for *five*. Laycock (1970b:1157) cites the view of Anthony Forge (personal communication) that the original Ndu family system was ternary, but the system is now mixed (see below).

A quaternary system is described by Franklin and Franklin (1961), where the same word (ki) is used for *four* and *hand*, and higher numerals are expressed by adding units (verbalised as 'thumbs') and by multiplying the 'hand' words, thus, *seven* is [kina] kode repo [*hand plus*] *three thumbs*, and *eight* is ki lapo *two hands*. This system exists in conjunction with a body-parts tally system. Other quaternary systems ('tetrad-type') are mentioned for a small area of western New Guinea by Galis (1960), citing Kluge (1942), 'namelijk in de Humboltbaai- en Skodorpen en over de oostelijke grens (Leitere, Vanimo, Wewak, etc.)'.

LANGUAGE	Kewa	Gende	Sibil	Orokolo Telefol Hewa	Yuri Kalam	Anggor	Namau	Enga (Maramuni)	Gidra	Bine Awyi
little finger (thumb)	1	1	1	1	1	1	1	1	1	1
ring (index) finger	2	2	2	2	2	2	2	2	2	2
middle finger	3	3	3	3	3	3	3	3	3	3
index (ring) finger	4	4	4	4	4	4	4	4	4	4
thumb (little finger)	5	5	5	5	5	5	5	5	5	5
'heel of palm'	6	–	–	–	–	–	–	–	–	–
palm	7	–	–	–	–	–	–	–	–	–
wrist	8	6	6	6	6	6	6	–	6	6
forearm	9	7	7	7	7	7	7	6	–	–
radius	10	–	–	–	–	–	–	–	–	–
ulna	11	–	–	–	–	–	–	–	–	–
elbow (inner)	12	–	8	8	8	8	8	7	7	7
lower upper arm	13	8	–	–	–	–	–	–	–	–
biceps	–	–	9	9	9	9	–	–	–	–
upper upper arm	14	9	10	–	–	–	–	–	–	–
armpit	–	–	–	–	–	–	–	–	8	8
edge of shoulder	15	–	–	–	–	–	–	–	–	–
top of shoulder	16	10	11	10	10	10	9	8	–	–
neck muscle/clavicle	17	11	–	–	11	–	–	9	–	–
side of neck	18	12	–	11	–	–	10	–	9	–
nipple	–	–	–	–	–	11	11	–	–	9
side of jaw	19	–	–	–	–	–	–	–	–	–
ear	20	13	12	12	–	–	–	10	–	–
cheek/temple	21	14	–	–	–	–	–	–	–	–
eye	22	15	13	13	–	–	–	11	–	–
inside of corner of eye	23	–	–	–	–	–	–	–	–	–
* top of breastbone	–	–	–	–	12	12	12	–	10	10
* nose-bridge	24	16	14	14	–	–	–	12	–	–
TOTAL	47	31	27	27	23	23	23	23	19	19

TABLE 1: Body-Parts Counting Systems in the New Guinea Area

(Asterisk denotes central point)

The occurrence of such a system seems established for at least three languages of the Sko Phylum (Sko, Wutung, and Vanimo), but certainly does not extend as far east as Wewak (Boiken-speaking).

Quinary systems are also widespread in the New Guinea area, but in their purest (unmixed) form - five distinct roots for the first five numbers, and no higher numerals - are rare, or perhaps non-existent. It is difficult to be sure, as many systems that have been recorded as quinary have in fact numerals for *10* and *20*, but the investigator has often given up before counting so high. Ray (1907:466) cites the Austronesian language Wedau as an example 'of the purely quinary method of counting to twenty' - but in this system, *fifteen* is not *three fives* (or *three hands*), but *two hands and one foot*, while *twenty* is *one man is finished*, which indicates, as Ray acknowledges, a rudimentary vigesimal system.

A senary (six-based) system is called the 'Melanesian type' by Kluge (1942) and Galis (1960), but they state it to be rare in the New Guinea area, occurring only on Frederik Hendrik Island, among the Kanum, and in the Milne Bay area; I have not been able to confirm these claims. However, a separate numeral for *six* occurs in some languages whose basic system is quinary (see below).

Pure decimal systems characterise many Austronesian languages of Island Melanesia, Polynesia, and Indonesia, but are rarely found within the New Guinea area itself; the only examples known to me are the Austronesian languages of Biak, Numfoor, and neighbouring areas, cited by Galis (1960). Decimal systems do not appear to exist at all in the non-Austronesian languages of the New Guinea area; the apparent decimal system recorded for Busa (Laycock 1973:52) is most likely to be interpreted as the first ten numbers of a body-parts system, and Galis (1960) reaches the same conclusion about an apparent decimal system recorded (but rather unreliably) for Kaeti.

No vigesimal 'systems' exist anywhere in the New Guinea area, but the term is a handy one for use in describing the mixed systems which have a word or expression for *twenty*. The commonest of such mixed systems - perhaps the most widespread number system in the New Guinea area - is the 'mixed quinary/vigesimal' system. In this system, separate numerals are normally expressed up to *five*; the word for *five* most frequently also means *hand*, so that *ten* is *two fives* or *two hands*, *fifteen* is *three fives*, *three hands*, or *hand and foot*, and *twenty* is usually (but not always) some word or phrase that implies *one man*.

A separate expression for *twenty* may also occur in languages that are usually described as 'imperfect decimal' or 'quinary with word for ten' - that is, 'mixed quinary/decimal'. A typical system of this nature is that of the Austronesian language of Môr (Geelvink Bay, West Irian: data from fieldnotes of Laycock) (not to be confused with the non-Austronesian, i.e. Papuan, Mor language in the Bomberai Peninsula which is a stock-level isolate in the Trans-New Guinea Phylum (see 2.6.2.3.2.)); in this language, na'u means *man*:

1	tata	*6*	rimo ma'a tata	*11*	ta'ura ma'a tata	*16*	ta'ura ma'a rimo ma'a tata
2	ruro	*7*	rimo ma'a ruro	*12*	ta'ura ma'a ruro	*17*	ta'ura ma'a rimo ma'a ruro
3	oro	*8*	rimo ma'a oro	*13*	ta'ura ma'a oro	*18*	ta'ura ma'a rimo ma'a oro
4	a'o	*9*	rimo ma'a a'o	*14*	ta'ura ma'a a'o	*19*	ta'ura ma'a rimo ma'a a'o
5	rimo	*10*	ta'ura	*15*	ta'ura ma'a rimo	*20*	na'u tata

The 'mixed quinary/decimal' systems, in which the word for *twenty* is *two tens*, is one of the commonest systems in Austronesian languages in Melanesia; Ray (1907:465) cites the example of Sinaugoro for Papua New Guinea, and Laycock (1974) gives the numerals in the Austronesian language of Ali.

A 'mixed binary/quinary' system occurs, with numerals expressing *one*, *two*, and *five* only; instances of higher numerals are rare in this system, of which examples are given for Warapu (non-Austronesian) and Sera and Sissano (Austronesian) by Laycock (1974). Aufenanger (1959) gives the binary system of the Gants language, which includes not only a word for *five*, but also a term for *ten*, and one expression for *twenty* that is not derived from the words for *five* or *ten*.

Other mixed systems do not permit of easy categorisation. In languages of the Ndu family, one finds, essentially, a quinary/vigesimal system; but one finds *four* in Abelam and Yelogu expressed as *two plus two* (binary system), and an additional numeral *six* in Abelam. When this numeral occurs, *seven* may be expressed as *six plus one* or *five plus two*; but *five plus two* is homophonous with *two fives* for *ten*, so there is a certain amount of confusion in the system, which looks like a senary system yielding to the pressure of a quinary system. Boiken informants explained to A. Forge (Australian National University, personal communication) that they 'count the finger that has not grown yet' to field the numeral *six*; however, the word used in the closely-related Abelam (kayk) appears to mean something like *fist* or *closed hand*. Confusion between the quinary and senary systems is also seen in the fact that, in normal Abelam counting, *seven* is expressed as *six plus two*

(using the morpheme kayk *six*) rather than *five plus two* - and similarly for *eight* (*six plus three*) and *nine* (*six plus four*).

The number system of Buin (Bougainville) is also unusual. Numerals vary with the class of the noun they qualify, but in all 'number-sets' there are only six true numerals; *seven* is expressed as *three less*, *eight* as *two less*, while *nine* in almost all number-sets is an invariable morpheme meaning something like *completed*. *Ten* is then the first number in a number-set for counting *tens*, as *hundred* is the first in a set for counting *hundreds*, as can be seen in the following example:

Count: *things*		Count: *tens*		Count: *hundreds*	
1	nonumoi	*10*	kiipuro	*100*	pore
2	kiitako	*20*	kiikoko	*200*	kiporigo
3	paigami	*30*	paimaku	*300*	paiporegi
4	korigami	*40*	korimaku	*400*	koriporegi
5	upugami	*50*	upumaku	*500*	upuporegi
6	tugigami	*60*	tugimaku	*600*	tugiporegi
7	paigami tuo	*70*	paimaku tuo	*700*	paiporegi tuo
8	kiitako tuo	*80*	kiikoko tuo	*800*	kiporigo tuo
9	kampuro	*90*	kampuro	*900*	kampuro

The Buin counting system goes much higher than most in the Papua New Guinea area; separate numerals express *thousand* (kukurei) and *ten thousand* (taarina).

Mixed systems are also found in Austronesian languages; Ray (1907:465) gives examples of multiplication in Roro (otherwise a quinary/decimal system), in which *six* is *two threes* and *eight* is *two fours*. The phenomenon of subtraction that we have seen in Buin is also met with in Hula and other Austronesian languages of Papua; thus, Hula mapere-kaula-vaivai *seven* is analysable as *one less than two fours*, and mapere-ka-gahalana *nine* is *one less than ten*. Further variations on the same themes are met with, in both Austronesian and non-Austronesian languages, but do not seem to involve any processes beyond those mentioned.

The semantics of the numerals have not really been analysed. In 'body-parts' systems, the names of the points of the system are the same as the names of the relevant body parts (though there are sometimes minor variations). In the other number systems, numerals other than *five*, *ten* and *twenty* - when they occur - have no meaning other than that of pure numeral; the only exception seems to be Boiken nʌwarʌ *four*, which can be interpreted as being a contraction of napʌ warʌ *one dog* (because a dog has four legs?). Also worthy of remark is the widespread occurrence in the Sepik region, in genetically unrelated

languages, of a root *BT for *two*; compare Seta pəla, Aruop piya (Torricelli Phylum), Purari hɔndi (Sko Phylum), Baibai nɛmbɛli (Kwomtari Phylum), Waris sampəla[1] (Border Stock, Trans-New Guinea Phylum), Namie pəli, Abelam vətik (Sepik-Ramu Phylum); also Abelam bət, Manambu bər *they two*. The resemblance to Common Australian *bula(dj) *two* may not be entirely accidental.

The number *five* almost invariably means *hand* in all systems involving a quinary component; it does not appear to do so when the system is basically decimal. In Austronesian languages, one also finds that, where a reflex of POC *lima *hand, five* occurs, it is certain to mean the numeral *five*, whether or not it also means *hand*; but reflexes of other *hand* words occur, and may mean *five*.

Ray (1907:477) suggests that PAN *puluh *ten*, or at least its reflexes in Papua, means *handful*, while *twenty*, as has been mentioned above, is usually a word meaning *man*, (perhaps *crocodile* in some Ndu family languages). No other numerals appear to have any assignable meaning, except for Buin kukurei *thousand*, which also means *domestic fowl*.

2.3.4.2. SEMANTICS

Holmer (1966) has written the only comprehensive work on semantic features of 'Oceanic' languages (in this case, Australian and Austronesian); many of the features he cites for these languages are also common in non-Austronesian languages in the New Guinea area, which raises the question of areal features in language, and also of linguistic universals. For instance, he cites the following morphological and syntactic features, which are widely found in non-Austronesian languages of Papua New Guinea: lack of a singular-plural distinction in nouns; nominal inflexion expressing local relation only; comparison in adjectives often only intensification; relative clause markers usually absent; 'reason' clauses often lacking; time and place undifferentiated in the morphology. On the lexical side, Holmer mentions the use of the lexeme *eye* to mean *origin, hole, focal point*, in the same way that *arm* is extended to mean *branch, addition, thing held in the hand*; these features are also found in non-Austronesian languages. Holmer also attacks the view that 'Oceanic' languages are lacking in abstracts, and makes the point - equally valid for all languages of the area under discussion - that the basis of this view is the fact that the distribution of concrete and abstract between languages of widely differing types seldom coincides.

A popular article on the linguistic world of speakers of non-Austronesian languages of Papua New Guinea is that by Laycock (1970a), but no data are given. Otherwise, most data on the semantic make-up of languages of the New Guinea area, in the lexical area at least, has come from experience with eliciting from standard wordlists, in that the areas of semantic disparity between the eliciting language and the elicited language become immediately apparent. For instance, McElhanon (1967) gives the following reasons for omitting 75 items from the Swadesh lexicostatistical list of 215 items:

> 'Some [items] were obviously non-cultural in all the languages (e.g. ice, freeze and snow). Others were non-cultural in many of the languages (e.g., fish, sea, salt and swim) and consequently involved borrowings. A large number of items were omitted because they involved repetitions of the same vernacular term (e.g., dirty-black, far-long, near-short, feather-hair, fog-cloud, narrow-thin-little, wide-thick-big, river-water, sharp-tooth, here-this, there-that, wife-woman, husband-man, lie-sleep, wipe-wash, hear-know and kill-hit).'

Laycock (1970b) extended the analysis of lexicostatistical lists, and indicated a number of additional sets of concepts which are frequently expressed by a single vernacular item in the New Guinea area: **bark-skin, day-sun, egg-eye-fruit-testicle, egg-seed-testicle, fingernail-claw, hand-arm, fire-tree-wood, flower-feather, salt-poison, red-blood;** to these we may add also **tree-Vitex cofassus (garamut)-slitgong (garamut).** It seems that some of these distributions may be highly regional, and may prove, if charted on the language map of the New Guinea area, to be useful in the establishment of linguistic groupings. Such a use of semantic domains for linguistic taxonomy is a new approach which is as yet untried, but which shows signs of promise for the future. Other common semantic features of the lexicon of New Guinea area languages include the expression of *blind* as *eye dead, eye bad, eye blocked*; *deaf* as *ear bad, ear blocked*; *elbow* and *knee* as *arm joint* and *leg joint* respectively; and the association of *good* with *correct, right hand, straight,* and *true*; and of *bad* with *incorrect, left, crooked,* and *untrue*. Semantic shifts between related languages also provide clues; thus, cognate forms can be seen to mean *sun* and *moon*; or *dog* and *pig*; or *bird* and *cassowary,* in pairs of related languages.

The last-cited semantic shift (*bird - cassowary*) (in languages of the Upper and Middle Sepik Stocks) shows that the belief that 'the cassowary is not a bird' is not found universally in the New Guinea area, although it is well-documented for speakers of Kalam (Bulmer 1967). Kalam taxonomy is further discussed in articles by Bulmer (1968), and

Pawley (1970), and further data will be eventually provided by a projected Kalam dictionary. The taxa of Enga have been analysed for Enga by A. Lang (1971, 1975), and the results incorporated into an Enga dictionary (A. Lang 1973). Further analyses of semantic domains, particularly with regard to lexicography, include the papers by Franklin (1971) and Newell (1970).

Outside of this small number of publications, however, the semasiological world of speakers of languages of the New Guinea area has hardly been explored. The increasing production of dictionaries will bring many of the noteworthy features to light, but it will be many years before they are fully understood.

N O T E

1. Unlikely to be derived from New Guinea Pidgin **sampela** = *some*, not only because of the widespread occurrence of the *BT forms, but also because cognate forms are found in Border Stock languages within Irian Jaya where the influence of Pidgin has not penetrated.

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PART 2.4.

THE APPLICATION OF THE COMPARATIVE METHOD TO PAPUAN LANGUAGES

2.4.1. THE APPLICATION OF THE COMPARATIVE METHOD TO PAPUAN LANGUAGES: GENERAL AND HIGHLANDS

S.A. Wurm

2.4.1.1. INTRODUCTORY REMARKS

Early impressions given by the Papuan languages of the New Guinea area had been that they were exceedingly numerous, extremely complex, and mostly quite different from, and seemingly unrelated to, each other, with no connections existing between them and any outside languages. Only a few small groups of quite evidently closely interrelated languages had been recognized.

Only during the fifties, some order began to be established in the vast conglomerate of the Papuan languages, and the existence of a few quite large groups of obviously interrelated Papuan languages recognized in several parts of the New Guinea mainland (Wurm 1960). Until that time, the term "Papuan" had been applied to languages of the New Guinea area which were not Austronesian solely as a negative classificatory term labelling such languages as non-Austronesian.

These first steps were, during the late fifties and the sixties, followed by the establishment, in part in preliminary forms, of a quickly increasing number of separate, mostly quite large, groups of interrelated Papuan languages (Wurm 1971), largely by linguists connected with the Australian National University. This preliminary work was, for the greater part, carried out on the basis of lexicostatistical comparisons and detailed comparisons of language structure, with the extensive materials needed for this work in hundreds of separate languages generally obtained during extended fieldwork periods by the individual research workers themselves.

These methods were found to be generally adequate for combining languages into families, and families into stocks. Also, connections between

Wurm, S.A. "The Application of the Comparative Method to Papuan Languages: General and Highlands". In Wurm, S.A. editor, *New Guinea area languages and language study, Vol. 1, Papuan languages and the New Guinea linguistic scene.* **C-38:237-262**. Pacific Linguistics, The Australian National University, 1975. DOI:*10.15144/PL-C38.237*

members of different stocks allowing the inclusion of two or several stocks into one particular phylum were recognizable in quite a number of instances which resulted in the preliminary establishment of over a dozen distinct phyla before the end of the sixties. This number of distinct established phyla was swelled to beyond twenty by the additional establishment of a number of phylum-level families and stocks, i.e. language families and stocks which constituted distinct phyla by themselves.

2.4.1.2. EARLY ATTEMPTS AT PAPUAN COMPARATIVE LINGUISTICS

In the work mentioned so far, comparative linguistics methods aimed at providing definite proof for genetic interrelationships between languages had been resorted to only to a limited extent, and had in most cases played only a relatively subordinate role. Nevertheless, some of the results achieved through their application had special importance inasmuch as they foreshadowed the existence, between Papuan languages, of wider connections whose exact nature was to be recognized only at a later date. A short review of these earlier attempts at comparative linguistics may be given here:

Wurm (1951) undertook a comparative study of the languages of the Kiwaian Family in the Fly Delta area of southern New Guinea which was then thought to be an isolated family. On the basis of limited materials, he reconstructed one hundred and twenty Kiwaian Family proto-forms and demonstrated the sound changes apparent in the reflexes. At the same time, he noticed the existence of regular sound correspondences between some Kiwaian Family and Marind (south-eastern Irian Jaya, then Dutch New Guinea) words, and also mentioned correspondences between Kiwaian Family words, and words in Binanderean and Koiarian languages in the south-eastern tail section of New Guinea. While hypotheses could be put forward by him in an attempt to explain the obvious connections between Kiwaian and Marind languages, no explanation could at that time be given to account for a portion of those between Kiwaian Family words, and the corresponding words in Binanderean and Koiarian languages. Today it is known that all these languages are in fact interrelated, and that early study provided the first indication of this.

A short time after the publication of Wurm's 1951 study, small-scale comparative work was undertaken by Drabbe (1953) in languages of the southern part of what was then Dutch New Guinea, viz. in languages which are now known to be members of a single family, the Asmat-Sempan-Kamoro Family (McElhanon and Voorhoeve 1970, see also 2.6.2.2.6.1. in this volume). A few years later, Bromley (1961) applied comparative linguistics methods in his study of the phonology of languages belonging to the Greater Dani Family located in the highlands of what was then Netherlands

New Guinea. Rosemary Young (1962) introduced comparative linguistics considerations into her study of the phonemes of four languages of one of the families of the East New Guinea Highlands Stock, in the Papua New Guinea Highlands, and Laycock (1965) included some comparative notes in his study of the Ndu Family in northern Papua New Guinea. Wurm carried out some preliminary comparative studies (unpublished) in languages of the East New Guinea Highlands Stock set up by him in the late fifties (Wurm 1960), in order to establish the correctness of his assumption of the existence of a genetic relationship between these languages. Healey (1964b) undertook detailed comparative linguistic work in the Ok Family straddling the central border area of Irian Jaya and Papua New Guinea, proving the genetic interrelationship of its member languages through reconstructing 406 proto-Mountain Ok, 159 proto-Lowland Ok and 134 proto-Ok forms. Bee (1965 and 1973) carried out similar work on a smaller scale in the languages of the Eastern Family of the East New Guinea Highlands Stock, reconstructing sixty Eastern Family proto-forms.

Bee based her reconstruction work on one hundred and eighty cognate sets of forms in seven communalects of the Eastern Family which according to Wurm's latest classification (see 2.7.2.2.3.) represent five distinct languages. After establishing the regular sound correspondences in the sixty least complicated and most transparent sets of cognates, she proceeded to reconstructing Eastern Family proto-phonemes, and Eastern Family proto-forms. The following are a few examples, with reflexes (the present writer has replaced Bee's symbols by the corresponding symbols in his own notation - see below 2.4.1.5.3. - to enhance comparability):

ear: *əʔraM

Tairora ato, Binumarien aaʔo:, Gadsup a:kami, Auyana aaʔa, Awa ere

hand: *-yə-u

Tairora kauʔu, Binumarien asauku, Gadsup aya:mi, Usarufa ayaamma, Awa ayən

louse: *nu-M

Tairora numə, Gadsup numi, Usarufa numma, Awa nu

fire: *ida-V

Binumarien iʔda, Agarabi ira, Usarufa irama, Awa ira

say: *TE-

Tairora tiro, Gadsup seʔu, Agarabi temi, Usarufa tiyo

On the basis of Bee's work, the present writer carried out comparative work in languages of the various families of the East New Guinea Highlands Stock, and reconstructed a number of East New Guinea Highlands proto-forms. On this wider basis, he suggested proto-forms for the Eastern Family which differed from those proposed by Bee, e.g.:

	Bee	Wurm
ear	*əʔraM	*akTaM ∿ *kaTaM
hand	*-yə-u	*kaSa(u)k^{M}Ü
louse	*nu-M	*nuMa
fire	*ida-V	*iḌa-
say	*TE-	*TET^{m}O

The East New Guinea Highlands Stock proto-forms reconstructed by Wurm do not differ very significantly from the Eastern Family proto-forms reconstructed by him, e.g.:

	*Eastern Family	*East New Guinea Highlands Stock
ear	*akTaM ∿ *kaTaM	*(O)KATAM
eye	*avu-Ta-ma	*avu-Ta-g^{m}A
hand, arm	*kaSa(u)k^{M}Ü	*kÖ(Sau)K^{M}Ü
skin	*aTima	*KaTiMaʔa
louse	*nuMa,[1] *numan	*numan
fire	*iḌa-	*iḌA{-te / -Pe}
eat	*nA	*nA
say, speak	*TET^{m}O	*(Ä)ĆɛT$^{(M)}$O
sleep	*PAĆ(i)^{a}	*PAĆ(i)(g)^{a}

Some examples of reflexes of East New Guinea Highlands Stock proto-forms in East New Guinea Highlands Stock languages may be given:

ear: *(O)KATAM

Enga kare, Kuman kuna- (*-TA- > Ø), Kamano əgesa, Tairora ato, Awa əre (the last two *K- > Ø), Gadsup a:kami (*-TA- > Ø), Gants keŋge (*-TA- > Ø), Wiru kapidi (≠)

hand: *kÖ(Sau)K^{M}Ü (also *arm*)

Note: *-(Sau)- has reflexes in only a few East New Guinea Highlands languages. In other instances *-(Sau)- > Ø has to be postulated. It is however attested from other Trans-New Guinea Phylum languages in which there are reflexes of the corresponding proto-Trans-New Guinea Phylum *-S$^{(r)}$Ï(u)- in the proto-form *KÖS$^{(r)}$Ï(u)Ć^{M}Ü (see below 2.4.1.5.5.2.). Enga kiŋgi, Kuman oŋgu, Kamano əga (the last two: *k- > Ø), Tairora kauʔu, Binumarien asauku (*k- > Ø), Gadsup aya:mi, Agarabi aya:n, Awa ayən (the last three: *k- > Ø)

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[1] On the basis of Eastern Family data alone, *nuMa seems justified because in Agarabe nun < East New Guinea Highlands Stock *numan (*-ma < Ø), the final -n appears to be equivalent to -m found in other forms such as Gadsup numi which may suggest -n and -m in these forms to be reflexes of *-M. Wider comparison has demonstrated that this assumption is in error.

louse: *numan

Enga lema (*n- > l), Kuman numan, Kamano -nema, Tairora numə, Gadsup numi, Usarufa numma, Awa nu (*-man > Ø)

fire: *iḌa-

Enga ita(te), Kuman ende, Kamano teve, Agarabi ira, Usarufa irama, Awa ira, Wiru toe

say, speak; talk, speech: *(Ä)ĆET$^{(M)}$O

Enga re (*say*), Kuman di- (*speak*), Kamano ge (*speech*) (the last three: *-T$^{(M)}$O > Ø), Tairora giro (*speak*), Agarabi temi (*speak*), Auyana siyo (*speak*), Kalam aŋgəp (*speak*)

With few exceptions, the comparative linguistics studies referred to so far shared the feature of being carried out in groups of languages whose interrelationship had been demonstrated by other methods, and was quite obvious - one of the exceptions being perhaps the languages of the East New Guinea Highlands Stock taken as a whole. The results of these particular comparative studies supplied proof of the genetic nature of the already known interrelationship between the languages concerned.

2.4.1.3. INITIAL ATTEMPTS AT ESTABLISHING WIDER RELATIONSHIPS BY COMPARATIVE LINGUISTICS METHODS

One of the special features of the comparative linguistics approach, i.e. its suitability for the detection and establishing of genetic relationship between languages which are not known or believed to be interrelated, or whose interrelationship appears to be only very tenuous and not demonstrable by other methods, had been taken advantage of only to a very limited, though important, extent in the years before 1968. One interesting exception, apart from the one concerning the relationship of the Kiwaian Family languages to other languages as mentioned above in 2.4.1.2., concerns the re-construction of proto-forms of certain function morphemes. Wurm (1965) drew attention to the great similarity of suffixed subject markers appearing with sentence-final verbs in the languages of the East-Central and Eastern Families of the East New Guinea Highlands Stock. Pawley (1966) took up this point and gave proto-forms for the forms listed in Wurm 1965, at the same time pointing out that the proto-Eastern-East Central suffixes exhibited detailed similarity to the major allomorphs of subject suffixes in member languages of the Kalam Family which Wurm (1965) had until then regarded as constituting a stock-level isolate within the East New Guinea Highlands Phylum which at that time was thought to comprise the East New Guinea Highlands Stock, the Kalam stock-level family and what was then assumed to constitute three stock-level isolates. This similarity between languages classified as belonging

to different stocks suggested a closer relationship, and it could in fact be established subsequently that the Kalam Family was a member family of the East New Guinea Highlands Stock (Wurm 1971, see also 2.7.2.2.3.). Wurm pursued the question of the subject suffixes further and found some regular correspondences between the proto-Eastern-East Central and Kalam forms, and forms in languages of the Ok Family established by Healey (1964a). For instance, the suffixes of the 2nd sg., 3rd sg. and 1st pl. were proto-Eastern-East Central *-an, *-i (more probably *-ai in Wurm's opinion), *-un. The Kalam forms were -an, -a, -un, and major allomorphs in most languages of the Ok Family were -ab, -a (masc.), -ub. It was also notable that the 1st sg. marker was, in Wurm's view, proto-Eastern-East Central *-u(n), whereas Kalam had -in, and several Ok Family languages -in ∿ -iin. There was only a vague suspicion of a possible relationship of the Ok Family to the East New Guinea Highlands Phylum at that time (Wurm 1964), and this discovery served to strengthen this suspicion which later proved justified (Wurm 1971, 1978).

At the same time, Wurm (unpublished) paid attention to the related question of the prefixed 1st, 2nd and 3rd singular object markers in a number of Papuan languages then believed to belong to several unrelated phyla, and found that the proto-forms *na-, *ka-, *a- could be posited for a considerable number of languages of what was then regarded as the East New Guinea Highlands Stock, the Huon Peninsula Phylum, the Anga phylum-level Family, the Ok Family, and also for languages in the highlands areas of Irian Jaya which had by then been included in a West New Guinea Highlands Phylum. This again strengthened vague earlier assumptions of some distant interrelationship bewteen all these languages.

By 1968, enough evidence of a general nature had been accumulated to permit the tentative inclusion of seven or eight of the phyla and other phylum-level groups mentioned above in one large supergroup named the Central New Guinea Macro-Phylum (a term first suggested for such a group in Voegelins 1965) which occupied close to three-quarters of the New Guinea mainland and comprised hundreds of languages (Wurm 1971) (see also 1.3.3. in this volume). However, apart from a few indications such as those reviewed above, comparative linguistics evidence for a genetic interrelationship between these separate phyla was still lacking.

2.4.1.4. THE DISCOVERY OF THE TRANS-NEW GUINEA PHYLUM

The first major step in a new direction was taken by K. Franklin (personal communication, later published in Franklin and Voorhoeve 1973) who demonstrated the existence of regular sound correspondences between over sixty words in one member language of the East New Guinea Highlands

Phylum, and one of the Central and South New Guinea Phylum established by Voorhoeve (1968) (see 1.3.3.). At the same time, it was found by Voorhoeve (unpublished, quoted in Wurm 1971; McElhanon and Voorhoeve 1970) that the Duna language which Wurm (1964, 1965, 1971) had classified as a family-level isolate within the East New Guinea Highlands Stock, could also be classified as one within the Central and South New Guinea Phylum (see 1.3.4.). This was suggestive of the possibility that the two phyla might be combined into one, and that their interrelationship was rather closer than tentatively assumed earlier. Such a belief was enhanced, and its validity geographically extended, by McElhanon (1967) noticing structural similarities between languages of the Ok Family and languages of the Huon Peninsula area which were separated from the Ok Family by the large East New Guinea Highlands Phylum. Also, Voorhoeve (1969), in considering the problem of the genetic interrelationship between the Asmat language of the Central and South New Guinea Phylum and the Sentani language in north-eastern Irian Jaya, produced evidence favouring the assumption of the possible location of their proto-language in a low-lying swampy area, and he suggested the Sepik or Ramu basins as possibilities, though in the light of the overall picture of possible past Papuan linguistic migrations, the Upper Fly and more westerly regions may perhaps seem more likely (see 3.4.1. in this volume). Voorhoeve also noticed striking similarities between lexical data on Madang District languages given by Z'graggen (1971) and corresponding data in Central and South New Guinea Phylum languages.

Encouraged by these various discoveries which took place in 1967-68 though some of their results were published only much later, McElhanon and Voorhoeve proposed the hypothesis that the member languages of at least a few of the distinct phyla included in the Central New Guinea Macro-Phylum could be shown to be in fact members of a single phylum and relatively closely interrelated. To substantiate this hypothesis, they concentrated on comparing lexical items of the Central and South New Guinea Phylum, and the Finisterre-Huon Phylum which had superseded the Huon Peninsula Phylum in McElhanon's classification, considering languages of other potential phyla only marginally, and purposefully leaving out the geographically interposed East New Guinea Highlands Phylum from their deliberations.

In carrying out their work, McElhanon and Voorhoeve compared 85 items throughout, and not less than 53 of these yielded interphylic series of cognates (McElhanon and Voorhoeve 1970). In the majority of these cases, the members of the series were phonetically so close, and the sound correspondences between them so obvious and regular that these results could be regarded as evidence for a relatively close genetic relationship

between the languages considered. The two authors reconstructed proto-forms and established the sound correspondences involved only in a few instances, because of the discontinuous nature of the basis chosen by them for their work. Nevertheless, the results seemed most impressive, and persuaded the authors to alter the concept of a Central New Guinea Macro-Phylum as consisting of a number of separate, distantly interrelated phyla, and to establish a single large phylum, named by them the Trans-New Guinea Phylum which embraced several of the former phylic members of the Central New Guinea Macro-Phylum in the form of the stocks previously composing them.

A point of great interest emerging from this work was the discovery of a small number of Austronesian loan words in Papuan languages located far away from any present-day Austronesian influence areas (see 2.5.4.2.2.) which was of great value in determining directions of language spread in earlier days (see 3.4.1.).

2.4.1.5. RECONSTRUCTION OF TRANS-NEW GUINEA PHYLUM PROTO-FORMS

2.4.1.5.1. *INTRODUCTORY REMARKS*

At this juncture, it was obvious that the next step was to be the comparison of the member languages of the East New Guinea Highlands Phylum, or at least of the large East New Guinea Highlands Stock, with those languages of the newly postulated Trans-New Guinea Phylum which had been drawn upon by McElhanon and Voorhoeve in their comparisons. Also, it was desirable to attempt the reconstruction of proto-forms in this.

The traditionally correct way to proceed in this would have been to reconstruct proto-forms for the individual families, followed by those for the stocks and then to compare the various stock proto-forms with each other with a view to reconstructing Trans-New Guinea Phylum proto-forms. Such a procedure has in fact been attempted in part through drawing on the few already proposed family and stock proto-forms, but there are two major difficulties: a) the very large number of languages involved which would delay obtaining results of wider validity for a long time; b) the fact that entire families within individual stocks are often characterised by the loss of proto-consonants or whole syllables whose loss becomes immediately obvious upon comparing languages of such families with those of another family within the same stock, or across stock boundaries. Similar remarks could, to a lesser extent, be made about entire stocks.

In view of these factors, it was therefore decided to attempt a short-cut method in drawing upon only one, two, or three languages of individual families within various stocks for the purpose of comparison and the re-

construction of proto-forms, with the proto-forms arrived at regarded as quite preliminary and subject to revision in the light of more detailed later work.

As the first step, a comparison was made by the present writer between those fifty-three lexical items for which series of interphylic cognates had been established by McElhanon and Voorhoeve (1970) (see 2.4.1.4.), and their equivalents in languages of the various families of the East New Guinea Highlands Stock. The results were encouraging: in individual languages of the Eastern Family, only an average of 24% of the items compared could not be tied in with the series of inter-phylic cognates established by McElhanon and Voorhoeve (1970) predominantly for members of the former Central and South New Guinea, and Finisterre-Huon Phyla. For the East-Central Family languages, this figure was 22%, for those of the Central Family 29% and for those of the West-Central Family 24%. These figures reflect rather accurately previous findings concerning the greater or lesser aberrant status of languages of those four families within the East New Guinea Highlands Stock (Wurm 1964) and also the greater structural similarity of East-Central Family languages to those of the Huon Peninsula area and the Ok Family (Wurm 1964).

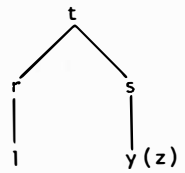
Similar procedures were applied by the present writer to languages belonging to the various stocks which are now regarded as members of the Trans-New Guinea Phylum, with encouraging results (see 1.3.4.) which ultimately led to the postulation of the Trans-New Guinea Phylum in its present form. Voorhoeve added further proof for language groups recently included in the phylum (see 2.6.2.3.).

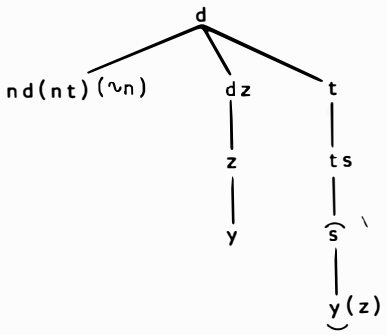
2.4.1.5.2. *CONSONANT AND VOWEL SETS*

In the course of the work referred to above in 2.4.1.5.1., it was found that, in Trans-New Guinea Phylum languages, there were sets of consonants and vowels whose members appeared sometimes as allophones of one phoneme in individual languages, and frequently as corresponding consonant and vowel phonemes in closely related languages, or in different dialects of one language. Such sets were for instance:

2.4.1.5.2.1. Consonants

Note: Consonants and consonant series in parentheses occur comparatively rarely. The frequency of the occurrence of consonants in individual columns decreases from top to bottom and from left to right.


t
r
s
l
y(z)


d
nd(nt)(∿n)
dz
t
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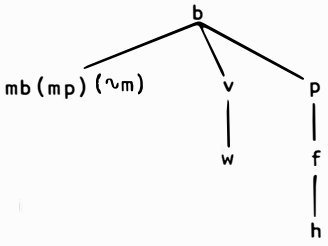
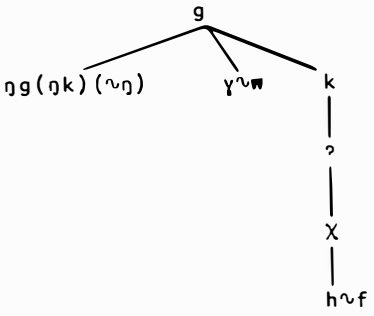
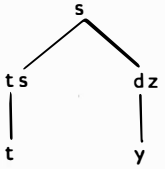
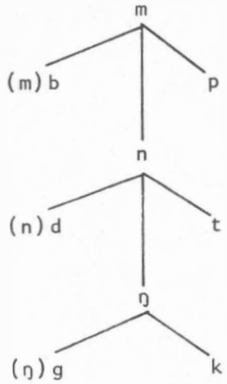
y(z)

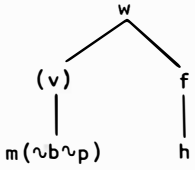

b
mb(mp)(∿m)
v
p
w
f
h


g
ŋg(ŋk)(∿ŋ)
ɣ∿w
k
ʔ
χ
h∿f


s
ts
dz
t
y

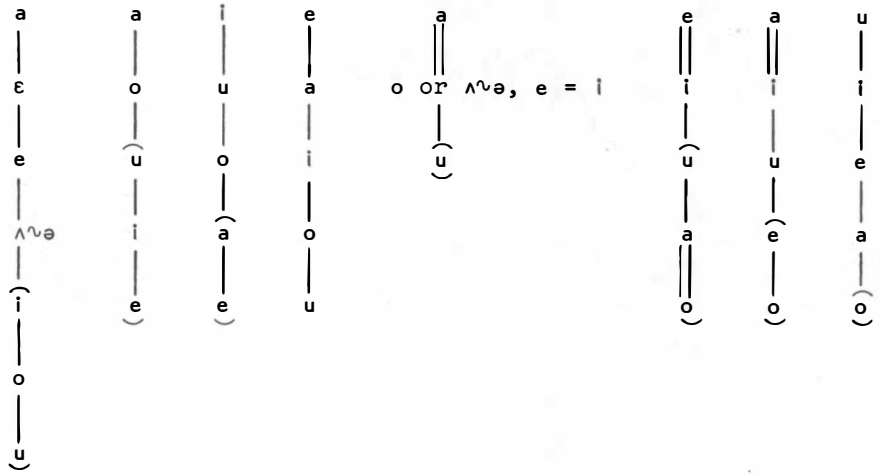

m
n
ŋ(∿ŋg)


m
(m)b
p
n
(n)d
t
ŋ
(ŋ)g
k


w
(v)
f
m(∿b∿p)
h

2.4.1.5.2.2. Vowels

Note: The same statements apply as have been made above in 2.4.1.5.2.1. for consonants, except that the appearance of vowels and vowel series added in parentheses is comparatively rarer than is the case with consonants similarly marked. The symbol = denotes approximately even frequency of the vowels denoted by the vowel symbols linked by it.



2.4.1.5.3. *PROTO-SOUNDS*

The appearance of such sets as listed above suggests the possibility of positing proto-consonants and proto-vowels for tentative reconstruction work. The following may be mentioned, and their reflexes listed under them, with the principles of their arrangement being the same as those laid down above in 2.4.1.5.2.1. and 2.4.1.5.2.2.

2.4.1.5.3.1. *Consonants

*P	*T	*T_1	*D
↓	↓	↓	↓
p	t	t	d~nd(nt)(~n)
b~mb(mp)(~m)	r	r	dz
v	l	l	z
w	s~y(z)		t
f~h	h		ts
			s~y

*Ḍ	
*T	*D
t	d∿nd(nt)(∿n)
r	dz
l	t
s∿y(z)	ts
h	s∿y

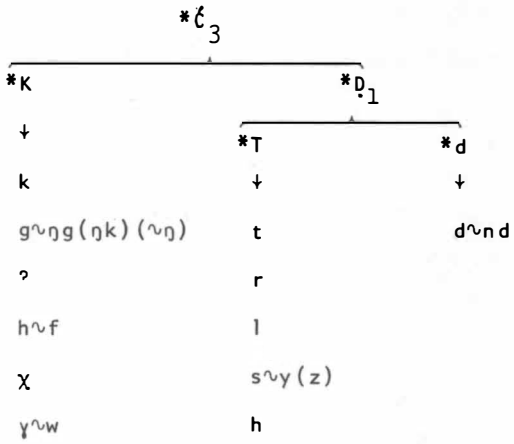
*Ḍ1	
*T	*d
t	d∿nd
r	
l	
s∿y(z)	
h	

*K
k
g∿ŋg(ŋk)(∿ŋ)
ʔ
h∿f
χ
ɣ∿w

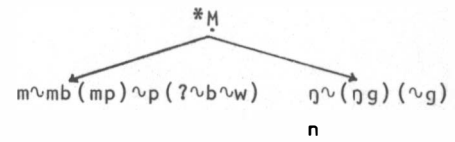
*ć	
*K	*Ḍ
	*T *D
k	t d∿nd(nt)(∿n)
g∿ŋg(ŋk)(∿ŋ)	r dz
ʔ	l t
h∿f	s∿y(z) ts
χ	h s∿y
ɣ∿w	

*ć1	
*K	*T
k	t
g∿ŋg(ŋk)(∿ŋ)	r
ʔ	l
h∿f	s∿y(z)
χ	h
ɣ∿w	

*ć2	
*K	*T1
k	t
g∿ŋg(ŋk)(∿ŋ)	l
ʔ	r
h∿f	
χ	
ɣ∿w	



*M
↓
m
ŋ(∿ŋg)(∿g)
n



*N
↓
n
ŋ

*S
↓
s
ts
t
dz
y

*W
↓
w(∿f)(v)∿m(∿b∿p)
Ø between vowels

*p
↓
p(∿w∿f∿v)

*t
↓
t
s

*d
↓
d∿nd

*k
↓
k
ʔ

*ʔ
↓
ʔ

*g
↓
g

*m
↓
m(∿mb)

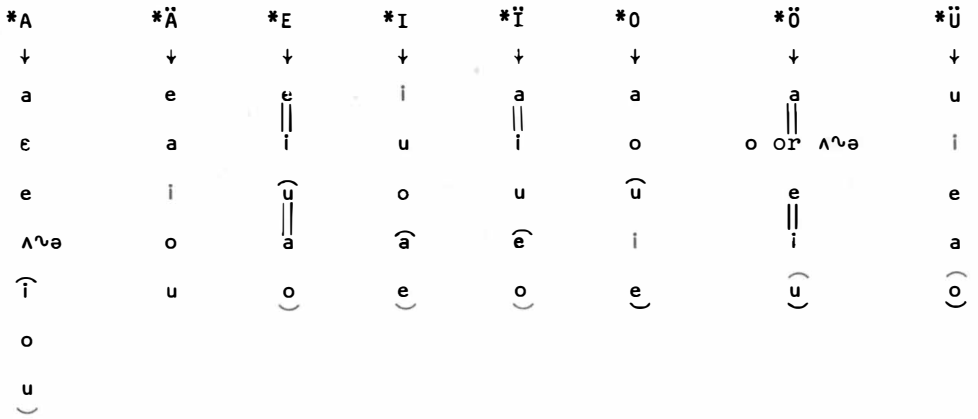
*n
↓
n(∿nd)

*ŋ
↓
ŋ(∿ŋg)

*v
↓
v∿w

*r
↓
r
l

2.4.1.5.3.2. *Vowels



Note: With *Ö, the frequency of e=i in reflexes is approximately half of that of a=o.

2.4.1.5.4. *RECONSTRUCTION PROCEDURES*

Proto-forms containing posited proto-consonants and vowels based on sets of consonants and vowels such as those listed in 2.4.1.5.2.1. and 2.4.1.5.2.2. were tentatively reconstructed, with attention paid to the question of regularities in the appearance of member consonants and vowels of given sets in this reconstruction work. In those few instances in which proto-forms had been reconstructed before by a step-by-step comparison method proceeding from local proto-forms to forms of wider applicability, it was found that the differences between the tentative proto-forms arrived at on the basis of these consonant and vowel sets, and the already available reconstructions were not greatly significant. In view of this, proto-forms arrived at on the basis of these consonant and vowel sets are believed to have at least some validity in a preliminary way, and proto-Trans-New Guinea Phylum forms have therefore been suggested along these lines.

2.4.1.5.5. *ILLUSTRATIVE EXAMPLES*

2.4.1.5.5.1. Introductory Remarks

The symbols representing posited proto-sounds have been listed in 2.4.1.5.3. The following explanations may be added:

$\ddagger$ = metathesis.

The addition of a raised consonant symbol after another consonant symbol (e.g. *T^{M}, *K^{m}) serves to indicate that in a few languages in a set of languages compared, reflexes of the proto-consonants denoted by the raised symbol are met with in the place of the reflexes of the proto-consonants referred to by the first, non-raised, member of such a pair of symbols which are more commonly encountered in the given set of languages.

Symbols - including raised ones - and syllables of proto-forms appearing in parentheses indicate proto-consonants, vowels and syllables whose reflexes appear in only a very limited number of instances in present-day member languages of the Trans-New Guinea Phylum.

2.4.1.5.5.2. Family, Stock and Phylum Proto-Forms

To illustrate the nature of Trans-New Guinea Phylum proto-forms, the list given in 2.4.1.2. of some proto-forms suggested by Wurm for the Eastern Family of the East New Guinea Highlands Stock, and for that stock itself, has been repeated below, with the Trans-New Guinea Phylum proto-forms added to them.

	*Eastern Family	*East New Guinea Highlands Stock	*Trans-New Guinea Phylum
ear	*akTaM ∿ *kaTaM	*(0)KATAM	*(0)KAḌAM(a) ∿ (*(0)ĆAḌAM(a))
eye	*avu-Ta-ma	*avu-Ta-g^{m}A	*(avu-)Da$\ddagger$K^{M}A(-Pur$^{(n)}$)
hand, arm	*kaSa(u)k^{M}Ü	*kÖ(Sau)K^{M}Ü	*KÖS$^{(r)}$Ï(u)Ć^{M}Ü
skin	*aTima	*KaTiMa$^{?}$a	*KOḌOP^{M}Ika
louse	*nuMa, *numan	*numan	*T^{n}ImÄ{n, ŋ}
fire	*iḌa-	*iḌA{-te, -Pe}	*(Ï)ḌÄ{-Ḍe, -kaP$^{(M)}$}Ä
eat	*nA	*nA	*(Ï)n$^{(d)}$A(i) ∿ (*(Ï)N$^{(d)}$A(i))
say, speak	*TET^{m}0	*(Ä)ĆET$^{(M)}$0	*(Ä)ĆÖ{T$^{n\sim ŋ}$0, (W)0}
sleep	*PAC(i)^{a}	*PAĆ(i)(g)^{a}	*PÄĆÄ(g)0

2.4.1.5.5.3. Some Trans-New Guinea Phylum Proto-forms with Reflexes

The reflexes listed below with each of the proto-forms constitute only a selection from those attestable in the over four hundred and ninety Trans-New Guinea Phylum languages. The reflexes are listed under stock (or sub-phylum) names in the same order in which the individual Trans-New Guinea Phylum stocks are listed in 2.5.3.3.2.

a) *ear:*

Trans-New Guinea Phylum: *(0)KAḌAṂ(a) ∿ (*(0)ĆAḌAṂ(a))

Note: The reflexes requiring the postulation of *(0)ĆAḌAṂ(a) are few in number.

Finisterre Stock: Sakam ɔdɔm (*K- > Ø), Mamaa du (*KA- > Ø)

Huon Stock: Nomu kedzap, Komba kesap, Timbe ɔndɔp (*K- > Ø), Mape (Western dialect) kadzeˀ, Kâte (Wamorâ dialect) hadzaˀ (the last two *Ṃ > ˀˀ)

East New Guinea Highlands Stock: Enga kare, Kuman kuna- (*-Ḍa- > Ø), Kamano agesa, Tairora ato, Awa are (the last two *K- > Ø), ?Kalam tumənt (*Ć + ⇄, or tum-ənt *KA- > Ø?), Gants keŋge (*-DA- > Ø), Wiru kapidi (⇄)

Kutubuan Stock: Foe yo-ḳʰiya

Central and South New Guinea Stock: Syiagha toro, Pisa suru (the last two *Ć), Southern Kati kende, Northern Kati kene-, Bimin kaluun

Angan stock-level Family: Kamasa kataˀa

Marind Stock: Boazi gia (*Ḍ > Ø)

Sentani Stock: Sentani aŋkei (*-ḌAṂ > Ø)

Dani Stock: Western Dani -tuk (⇄)

Dem stock-level Isolate: Dem ʸoŋelo

Wissel Lakes-Kemandoga Stock: Ekagi (Kapauku) gapa (*-ḌA- > Ø), Uhunduni ŋelo

Mairasi-Tanah Merah Stock: Semimi -fira

West Bomberai Stock: Baham kwɛrp-ak

Binandere Stock: Yega kari, Binandere gari = *hear*

Goilalan stock-level Family: ?Fuyuge gadorõ (˜ < *-Ṃ?)

Koiarian stock-level Family: Koita korema, Mountain Koiari gorema

Kwalean stock-level Family: Kwale akuru

Dagan stock-level Family: Onjob ikarana

Rai Coast Stock: Kwato a-giřaw, Jilim kasab (the last two forms would require the postulation of *Ṃ → m∿mb(mp)∿p(∿b∿w)... which is very rare (see 2.4.1.5.3.1.)

Pihom Stock: Pila nduʌt (*Ć)

Josephstaal Stock: ?Katiati kunsi-gi

Wanang Stock: Emerum gɨntsi

Brahman Stock: Isabi gari, Biyom kwʌɪ (*-D̤A- > Ø)
Teberan stock-level Family: Daribi oro (*K- > Ø)
Turama-Kikorian Sub-Phylum: Kairi ko: (*-D̤AM̤ > V:)
Eleman Sub-Phylum: Toaripi kiro-ri, Purari keporo (ɨ)
Trans-Fly Stock: Southern Kiwai gare, Gidra -krom, Tirio toroˀ (*Ć), Waia garo, Tonda ndʒařɔ (*Ć)
Bulaka River (Yelmek-Maklew) stock-level Family: Maklew op-klo, Yelmek oida (*K- > Ø)
Senagi sub-phylum-level Family: Dəra -gɛrə (may mean *opening*)
Border Stock: Awyi keato, Amanab aŋgut
Tor-Lake Plain Stock: Mander kere, Uria i-ŋara, ?Aikwakai a-wita
Nimboran sub-phylum-level Family: Nimboran keni (*-D̤A > Ø)
Kaure Sub-Phylum: ?Kaure goklu (*-D̤- > kl?)
South Birɑ's Head Sub-Phylum: Arandai a-kare

b) *bone:*
Trans-New Guinea Phylum: $*KO(K^{N(\dot{M})\ddot{I}})T^{(n)}AT_1 \sim (*ĆO(K^{N(\dot{M})\ddot{I}})T^{(n)}AT_1)$
Note: The reflexes requiring the postulation of $*ĆO(K^{N(\dot{M})\ddot{I}^{(n)}}AT_1)$ are few in number.
Finisterre Stock: Komutu kudat, Yau karat, Kewieng katar, Irumu konzar, Nakama kwada
Huon Stock: Nabak kaset, Nomu siwit, Burum siɣit (the last two *Ć-), Selepet haɣit
East New Guinea Highlands Stock: Enga kuri, Huli kuni, Kuman yambiro, Kamano yəferi- (the last two *Ć- and $(*\dot{M})$), Tairora vu-haari, Awa nya-husa, Kalam təŋi (*Ć-), Gants taŋəle (*Ć-), Wiru tono (*Ć-)
Kutubuan Stock: Fasu kiki, Foe kigi (the last two $*-T^{(n)}AT_1$ > Ø)
Central and South New Guinea Stock: Southern Kati kondo, Telefol kun, Awin kro, Duna kuni
Angan stock-level Family: Baruya ya-gɨnya
Gogodala-Suki Stock: Gogodala gosa
Marind Stock: Marind (Ngawir dialect) hiau
Sentani Stock: Tanah Merah oro, Demta ari (the last two *K- > Ø)
Dani Stock: Western Dani -kano, Kwerba kaka ($*-T^{(n)}AT_1$ > Ø)
Mairasi-Tanah Merah Stock: Mairasi -tura (*Ć-), Tanah Merah -so (*Ć-, $*-T^{(n)}AT_1$ > Ø)
Binandere Stock: Binandere undoru (*K- > Ø)
Mailuan stock-level Family: Mailu kisa
Rai Coast Stock: Bom tanu (*Ć-)
Pihom Stock: Parawen kwatʌ
Teberan stock-level Family: Daribi diri (*Ć-)
Pawaian stock-level Family: yɛmi (*Ć- and $(*\dot{M})$, $*-T^{(n)}AT_1$ > Ø)

Inland Gulf Sub-Phylum: Ipiko hɔřo
Eleman Sub-Phylum: Toaripi uti (*K- > Ø)
Trans-Fly Stock: Southern Kiwai soro (*Ć-), Bine kake, Agöb kut, Waia oro (*K- > Ø), Dorro goat, Yei gor
Oksapmin sub-phylum-level Isolate: Oksapmin tamo: (*Ć- and $^{(*\dot{M})}$, *-$T^{(n)}AT_1$ > Ø)
Senagi sub-phylum-level Family: Senagi hamənda ($^{(*\dot{M})}$)
Pauwasi Sub-Phylum: Dubu gwaro
Border Stock: Manem kar, Waris kəl, Amanab kil
Tor-Lake Plain Stock: Mander kera-ne
Usku phylum-level Isolate: Usku kla
South Bird's Head Sub-Phylum: Kampong Baru utu (*K- > Ø)
Kolopom (or Frederik Hendrik Island) sub-phylum-level Family: Kimaghama duro (*Ć-)

c) *fire:*
Trans-New Guinea Phylum: *(Ï)ḌÄ{-Ḍe / -kaP}(M)Ä̈

Note: The reflex r(l) < *-Ḍ- is, with the exception of one Marind Stock language, restricted to those instances in which reflexes of *Ï- are present or ⇄ has occurred. The vowel preceding the reflex of *-Ḍ- may have been a conditioning factor in the manifestation of this reflex as r(l). In view of this, it might be possible to postulate *-D- instead of *-Ḍ- in the Trans-New Guinea Phylum proto-form.
Finisterre Stock: Kewieng dere, Neko titɛ
Huon Stock: Momolili tedzi, Momare dzaˀ (*-Ḍe > ??)
East New Guinea Highlands Stock: Enga ita(te), Kuman ende, Kamano teve (*-ka- > Ø), Agarabi and Awa ira, Usarufa irama (*-ka- > Ø), Wiru toe
Kutubuan Stock: Fasu ira, Foe irʌ
Central and South New Guinea Stock: Bedamini daru, Awin de, Kamoro uta, Asienara usara
Angan stock-level Family: Baruya dɨka
Gogodala-Suki Stock: Gogodala ila, Suki araka
Marind Stock: Marind (Ŋgawir dialect) tekav, Yaqay de, reka
Kayagar stock-level Family: Kaygir aru
Sentani Stock: ?Sentani i
Dani Stock: Western Dani idu, North Ngalik iduk, Kwerba ser
Wissel Lakes-Kemandoga Stock: Ekagi (Kapauku) dagu = numerical coefficient for *fire*, bo-diya = *fire*, Moni usa
Mor stock-level Isolate: Mor taha
Binandere Stock: Binandere izi, Aeka zi
Goilalan stock-level Family: Kunimaipa iti
Kwalean stock-level Family: Kwale ire

Manubaran stock-level Family: Maria ita-isa
Mailuan stock-level Family: ?Mailu eu
Dagan stock-level Family: Jimajima ira-rema
Rai Coast Stock: Erima eya
Mabuso Stock: Kare ɔnda, Murupi arʌ, Mosimo ʌre, Sihan dʌy
Isumrud Stock: Malas andup (*-ka- > Ø)
Wanang Stock: Paynamar tʌtɛ
Brahman Stock: ?Tauya o?o (*-ḍ- > ?? *ć?)
Pawaian stock-level Family: Pawaia sia
Teberan stock-level Family: Polopa si, Daribi sia
Inland Gulf Sub-Phylum: Ipiko tai, Tao Suamato ta^{l}li
Trans-Fly Stock: Southern Kiwai era, Wabuda kera (↕), Bine utio, Tirio su:r
Bulaka River (Yelmek-Maklew) stock-level Family: Yelmek ete, Maklew doyo
Senagi sub-phylum-level Family: Senagi hay
Pauwasi Sub-Phylum: Yafi dau
Border Stock: Awyi tao, Mananab suw (*-ka- > Ø), Kilmeri su
Tor-Lake Plain Stock: Berik tokwa, Bonerif ti, ?Uria syawk (↕), Taworta do
Molof sub-phylum-level Isolate: Molof tombe (*-ka- > Ø)
Usku sub-phylum-level Isolate: Usku yo
Nimboran stock-level Family: ?Nimboran kip (*(Ï)ḍÄ- > Ø?)
Kaure Sub-Phylum: Kaure sare, Narau sare
Kolopom (or Frederik Hendrik Island) sub-phylum-level Family: Kimaghama do, Riantana ^{n}dör
Timor-Alor-Pantar Sub-Phylum: Makasai ata

d) *eat:*
Trans-New Guinea Phylum: *(Ï)n$^{(d)}$A(i)- ∿ (*(Ï)N$^{(d)}$A(i)-
Note: A very few possible reflexes in sub-phylic groups such as the Mabuso Stock and Trans-Fly Stock would require the postulation of *(Ï)N$^{(T)}$A(i).
Finisterre Stock: Degenan na, Morafa nɛi, Ngaing nɛ, Komutu na, Awara na
Huon Stock: Sialum ne, Kâte (Wemo) nɔ
East New Guinea Highlands Stock: Enga ne, Kuman ne-, Kamano na, Agarabi na:, Tairora ne, Kalam nʸə-ŋ-, Wiru na-
Kutubuan Stock: Fasu na-, Foe ne-
Central and South New Guinea Stock: Asmat na, Kaeti andi, Telefol una, Southern Kati ane, Pare da, Kubo na, Duna nai-, Asienara na-
Angan stock-level Family: Baruya nɨ-
Gogodala-Suki Stock: Gogodala na
Sentani Stock: Sentani anə, Tanah Merah ani

Dani stock-level Family: Grand Valley Dani na-n, Kwerba na-wo
Dem stock-level Isolate: Dem na-m, ne-nawe
Wissel Lakes-Kemandoga Stock: Ekagi (Kapauku) nal-, Uhunduni no-win
Mairasi-Tanah Merah Stock: Mairasi ne-
West Bomberai Stock: Iha na-
Binandere Stock: Zia na, Binandere inda
Goilalan stock-level Family: Fuyuge ge (n-class verb)
Kwalean stock-level Family: Kwale a-ne-
Dagan stock-level Family: Daga na-
Rai Coast Stock: Urigina na, Sumau nɛ
Mabuso Stock: Murupi da, ?Kare za, ?Garuh la, ?Gumalu rɛ, ?Amele yɛ (the last four would require the postulation of *(Ï)N$^{(T)}$A(i))
Pihom Stock: Yaben nu
Isumrud Stock: Dimir na
Mugil stock-level Isolate: Mugil ne
Josephstaal Stock: Ikundun na, Osum ni
Wanang Stock: Angaua na
Brahman Stock: Isabi ne, Biyom n(a), Tauya ni
Teberan stock-level Family: Daribi na, Polopa nal
Turama-Kikorian Sub-Phylum: Kairi nɔ
Inland Gulf Sub-Phylum: Minanibai idie
Eleman Sub-Phylum: Purari u-navai
Trans-Fly Stock: ?Southern Kiwai oru-so (would require the postulation of *(Ï)N$^{(T)}$A(i))
Bulaka River (Yelmek Maklew) stock-level Family: Yelmek ŋa, Maklew ɔŋa (*-N-)
Oksapmin sub-phylum-level Isolate: Oksapmin da- (requires *(Ï)N$^{(T)}$A(i))
Senagi sub-phylum-level Family: ?Dəra re, ?Senagi lala (both would require the postulation of *(Ï)N$^{(T)}$A(i))
Pauwasi Sub-Phylum: Dubu ne, Wolof ne
Border Stock: Awyi na, Manem na, Kilmeri ne, Ningera dɛ
Tor-Lake Plain Stock: Mawes na-, Taworta di-
Molof sub-phylum-level Isolate: Molof ne
Nimboran sub-phylum-level Family: Nimboran na-m
Kaure Sub-Phylum: Kaure -ne
South Bird's Head Sub-Phylum: Puragi ni-, Yahadian no
Timor-Alor-Pantar Sub-Phylum: Makasai nawa

e) *say, speak, tell; talk, speech (myth, song):*

Trans-New Guinea Phylum: *(Ä)ĆÖ$\left\{\begin{matrix} T^{n\sim\eta}0 \\ (W)0 \end{matrix}\right.$

Note: a) Of the reflexes of *-$^{n\sim\eta}$-, -^{n}- is largely restricted to languages whose phoneme inventories do not contain ŋ.
b) There appears to be a tendency, on the semantic level, for reflexes of a possible shorter Trans-New Guinea Phylum proto-form *(Ä)ć̈ö- to mean *say, speak*, and of the full form *(Ä)ć̈ö$\left\{\begin{matrix}T^{n\sim\eta}o\\(W)o\end{matrix}\right.$ to mean *speech, myth, song*, though there are quite a few exceptions to this (e.g. Central and South New Guinea Stock: Pare sa = *speech*, Gogodala-Suki Stock: Suki gie = *speak*, Finisterre Stock: Degenan diy = *speak*). In languages in which short reflexes mean *speak* and long ones *speech*, the traditions governing the reflexes of *(Ä)ć̈ö- are sometimes different (see the Huon Stock: Ono (Amugen dialect), Sialum, Selepet and Momare examples given below), sometimes identical (see the Huon Stock: Nabak examples below).

Finisterre Stock: Degenan diy (*speak*), Asat giy (*speak*), Morafa yey (*speak*), Gira dʌr (*speak*), Nahu yɛ (*speak*), Som ya (*speak*)

Huon Stock: Ono (Amugen dialect) re (*speak*), don (*speech*); Sialum ra (*speak*), dan (*speech*); Nabak dze (*speak*), den (*speech*); Selepet sɔ, yɔ (*speak*), den (*speech*); Kâte (Wamorâ dialect) dɔŋ (*speech*), Momare doŋ (*speak*), yofa (*speech*); Migibac yowa (*speech*)

East New Guinea Highlands Stock: Enga re (*say*), Kuman di- (*speak*), kayo- (*speech, language*); Kamano ge (*speech, language*), Tairora giro (*speak*), Agarabi temi (*speak*), Auyana siyo (*speak*), Usarufa tiyo (*speak*), Kalam aŋgəp (*speak*)

Kutubuan Stock: Fasu ra- (*speak*), Foe ta- (*speak*)

Central and South New Guinea Stock: Kamoro tao (*song*), Pisa ro (*speak*), Telefol saŋ (*myth*), Awin sɔa (*speech*), Pare sa (*speech*), Agala to- (*speak*), Beami sia (*speak*), Kaluli to (*speech*)

Angan stock-level Family: Baruya di- (*speak*)

Gogodala-Suki Stock: Gogodala la (*speak*), gi (*speech, word*); Suki gie (*speak*)

Marind Stock: Yaqay tumi (*speech*)

Kayagar stock-level Family: Kaugat kep (*say*)

Sentani Stock: Tanah Merah erime (*speak*), ?Demta anaya-ndo-tan (*speak*)

Dani Stock: Western Dani kone (*speech*), Ngalik kele (*speech*)

Dem stock-level Isolate: Dem gaba (*speak*)

Wissel Lakes-Kemandoga Stock: Ekagi (Kapauku) tuupe (*song*), Moni ŋgudi (*speak*)

Binandere Stock: Binandere ge (*speak*)

Goilalan stock-level Family: Kunimaipa ŋga (*tell*), da- (*song*); Fuyuge ge- (t-class verb)(*say*)

Kwalean stock-level Family: Kwale ɣoe-re (*speak*)

Yareban stock-level Family: Yareba yau-ra (*speak*)

Mailuan stock-level Family: Mailu riba (*speak*)
Rai Coast Stock: Urigina kando (*talk*), Duduela lɛ- (*speak*)
Mabuso Stock: Amele yɛ- (*talk*), Isebe ze (*talk*), Bemal zɛ- (*talk*)
Pihom Stock: Tani tʌn- (*speak*)
Isumrud Stock: ?Bunabun tanʌ-r̃ (*speak*)
Josephstaal Stock: Pondoma gia (*talk*)
Wanang Stock: Emerum tsiaŋ (*speak*)
Pawaian stock-level Family: Pawaia hũɛ- (*speak*)
Inland Gulf Sub-Phylum: Minanibai te-ki (*speak*)
Eleman Sub-Phylum: Purari u-kuruai (*speak*)
Turama-Kikorian Sub-Phylum: Kairi ga- (*speak*)
Trans-Fly Stock: Tonda dɔðʌ (*speak*), Gidra yet (*speak*), Gizra (bö:)-ta (*speak*), Waia gaiya (*speak*), ?Southern Kiwai aro-go (*speak*)
Oksapmin sub-phylum-level Isolate: Oksapmin -ari (*say*)
South Bird's Head Sub-Phylum: Konda su-suane (*speak*)
Kolopom (or Frederik Hendrik Island) sub-phylum-level Family: Kimaghama jaoa-dru (*speak*), Riantana eta, tröa- (*speak, talk*)
Timor-Alor-Pantar Sub-Phylum: Buna? dale (*speak*)

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2.4.2. COMMENTS ON PROTO-ENGAN

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2.4.2.1. INTRODUCTION

Proto-Engan refers to the abstraction of an earlier language, represented today by languages such as **Enga, Huli, Ipili, Mendi, Sau, Kewa,** and probably **Wiru.** Except for the latter, each of these languages generally show lexicostatistical interrelationships above 40%. **Wiru,** which lies to the extreme east of the language family, upon first examination seems to be most closely related to the language to its immediate west - **Kewa.** However, more detailed analysis of certain aspects of **Wiru** retentions, in particular fossilised suffixes which appear to have historically marked a form of unalienable possession, indicates that **Ipili** (lying well to the west in the family) and often **Huli** also share common features with **Wiru.** Taken as a whole the Engan family (excluding **Wiru**) is more closely interrelated than any members of the family is with surrounding languages or groups, although **Kewa** has been shown to have some relationship to the Kutubuan languages, as well as the Bosavian group (Franklin and Voorhoeve, 1973). The relationship of **Wiru** is clearly at a more extreme historical horizon than other members of Proto-Engan.

This present article is exploratory in nature: no attempt is made to systematically reconstruct Proto-Engan. Rather we have outlined some cognate sets upon which a reconstruction may legitimately be attempted. A reconstruction of the pronominal forms and some phonemes has been attempted and is included in a separate section of this article.

2.4.2.2. COGNATE SETS

In the following representative cognate sets the groupings are on the basis of semantic (lexical) and grammatical criteria. Cognate sub-sets are numbered serially within each major semantic or grammatical list.

Franklin, K.J. "Comments on Proto-Engan". In Wurm, S.A. editor, *New Guinea area languages and language study, Vol. 1, Papuan languages and the New Guinea linguistic scene.* **C-38:263-276.** Pacific Linguistics, The Australian National University, 1975. DOI:*10.15144/PL-C38.263*

For example A.1 is *back*, B.1 is *ancestor*, C.1 is *I*, and so on, where members of each list may be added to at some later date.

Abbreviations, in some cases, also include dialects of the major languages: KW, refers to West Kewa, KE, to East Kewa and KS, to South Kewa. Usually, however, only the following one letter abbreviations are used: K (Kewa), M (Mendi), S (Sau), E (Enga), H (Huli), I (Ipili), W (Wiru), and F (Fasu). Fasu, although not a member of the family, has a somewhat more distant but established genetic relationship (Franklin and Voorhoeve 1973). Words not considered as illustrative cognates are included in square brackets.

Set A illustrates mainly the names of body parts - human or otherwise, but also names for corresponding parts of trees and plants as well.

A.1 *back*: K masa, M mesa, S [hoki], E máitá, H [erebira], I masia, W [mukiti], F mati

A.2 *belly*: K robaa, M tomba ɜ [palo], E tóbá, H tombe, I tobene, W tepe

A.3 *bone*: KE kuli, KW uni, M win, MN kʷin, S holiki, E korí, H kuni, I kulini, W [tono], F kiki

A.4 *breast*: K adu, M ɔndu, S andu, E ádu, H adu, I adu, W adu, F [hoko]

A.5 *chin*: K yagaa, M sɔngɔ, S yankake, E agapú, H yanga, I agapu, W [pakunu], F akae

A.6 *ear*: KE kale, KW aane, MN kan, MW haɬ, S kerake, E karé, I ale, W [kabidi], F [senaki]

A.7 *eye*: KE le, KW ini, M in, S leke, E rége, H re, I lene, W lene, F hi

A.8 *leg, foot*: KE, KW àà, KS ange, M ang, S anke, E kápé, H ge, I kene, W [kawà], F korake

A.9 *forehead*: K weno, M wonɔ, S wenoko, E [ragárú], H wane kui, I weno(ne), W pono, F wamu

A.10 *hair*: K iri, M iti, S iti(ki), E ítí, H iri, I iti(ni), W [píne], F iti

A.11 *hand*: K ki, M ki, S kiki, E kigi, H ki, I kini, W [yono], F [hokono]

A.12 *knee*: K rumu, M tum, S tumiki, E rúma, H [ge], I [aiki(ni)], W [wadini]

A.13 *liver*: K pu, M pu, S puki, E pugi, H puní, I [lasiane], W [kolotíni], F [kosoko]

A.14 *name*: KE ibi, KW bi, M mbi, S biki, E [kége], H mini, I [gene], W ibíni, F [yano]

A.15 *neck*: K má, M ma, S make, E magé, I mane, W [kabè], F mawi

A.16 *root*: K pitya, M piɬa, S piki, E pigi, H pini, I pini, W [teke], F pikinu

A.17 *shoulder*: K pasa, M pesa, S peyoko, E [rake], I payia(ne), W [wagéne], F [kinu]

A.18 *tongue*: K keke, MW hege, S kekeke, E kekenge, H hege, I eke, W kekέ, F [alu]

Set B lists mainly kinship terms, but also includes generic terms for man, girl, and so on.

B.1 *boy*: K naaki, M naik, S [weke], E [wané], H [igiri], I [ane], W [ali mati]

B.2 *brother*: K ame, MW hame, S hameme, E [yagóge], H hameme, I amene, W wamene

B.3 *cross-cousin*: KW aai, KE kai, M he, S kąį, E kaiigí, H hani(ni), I aini

B.4 *father (my)*: K aapa, M ap, E apáné, H aba, I apa

B.5 *man*: KE ali, KW áá, M ɔɨ, S hali, E akári, H agali, I akali, W ali, F [aporo]

B.6 *mother (my)*: K ama, M am, E mamea, H [ąya], I ama

B.7 *mother (his)*: K agi, MW anji, S inkiki, E [edagí], H [įdya], I agini, W [one kąụà], F [ama]

B.8 *sibling (opp.)*: KE bali, M mbɔli, S beliki, E [pimarége], H mbalini, I [imalini], W [anaí], F [apu]

B.9 *woman*: KE winya, KW ona, M [ten], E éda, H wali, I wada, W [atòa], F hinamo

Set C includes mainly free personal pronouns, demonstratives and interrogatives.

C.1 *I*: K ni, M ni, S į, E nabá, H ĺ, I ni(ba), W no, F ano/nomo

C.2 *he*: K (n)ipu, M ipu, S ipiki, E báa, H ibu, I (e)baka, W [onè], F ipi/epo

C.3 *that*: K mo, M mongo, S mo, E dóko, I molo, W [eni], F [ane]

C.4 *they (pl.)*: K (n)imu, M nim, S ikl, E dúpa, H ti, I yakaba, W [kini], F [yi/ipu]

C.5 *they two*: K (n)ipu, M ipi, S ipiliki, E dorápo, H libu, I liyaba, W [kità], F tati/tetapo

C.6 *this*: K go, M ngo, S do, E dáke, H o, I oko(ne), W [ì], F one

C.7 *thou*: K ne, M nge, S neke, E éba, H ĺ, I (n)iba, W nè, F ne/nomo

C.8 *we (pl.)*: KE naa, KW niaa/nyaa, M nɔ, S niki, E náima, W [toto], F [isina/isu]

C.9 *we (dl.)*: K saa, M yɔ, S diki, E narída, H iya, I nalipa, W [totà], F [iti/eto]

C.10 *what?*: KE ali, KW ake, M aik, S aleke, E áki, H agi, I aki, W edele, F [yakapa]

C.11 *when?*: K a rabo, M a rɔmbu, S [handimæ], E [adokópá], H [angi], I [a kidi], W [manipeté], F [masinaka]

C.12 *who?*: K api, M ap, S epi, E apí, H ai, I api, W [teyó], F epa
C.13 *you (pl.)*: K (n)imi, M imi, S iki, E nyakáma, H tl, I yakaba, W [kíwi], F nanima
C.14 *you (dl.)*: K (n)ipi, M ipi, S ipiliki, E nyarabo, H libu, I liyaba, W [kità], F titi/teto
C.15 *three*: K repo, M tep, S tepo, E téma, H tebira, I tebo, W temboto, F [isia]
C.16 *two*: K laapo, M kap, S yæpo, E ráma, H [kira], I lapo, W [ta kutà], F teta

Set D consists of the names of objects and items, but excluding flora and fauna.

D.1 *house*: K ada, M and, S nda, E ádá, H anda, I ada, W [yapù], F ape
D.2 *net bag*: K nu, M nu, S nu, E nuú, H nu, I nuu, W [kà], F [aku]
D.3 *pig*: K mena, M [mok], MW [jome], S mænæ, E mená, H [nogo], I [yia], W [kaì], F [saro]
D.4 *salt*: K aipa, M æp, S epi, E aípí, H ibi, I ipi
D.5 *ashes*: K taga, M tɔng, S lankæ, E [búsi], H danga, I [pete], W [kùku], F [katema]
D.6 *earth*: K su, M su, S yu, E yúu, H [dindi], I yuu, W [itonó], F [hauwaka]
D.7 *moon*: KE eke, M ek, S eke, E [kaná], H ege, I [ana], W tokene, F heke
D.8 *mountain*: KE kari, MW har, S [pote], E [mádá], H hari, I ati, W [tóno], F uli
D.9 *sand*: K ipa mu, M ip mu, S [hou], E ipa [kée], H iba mụ, I ipa mau, W [kibi], F [tekima]
D.10 *stone*: KE kana, MW han, S [topi], E kaná, H [tǫle], I ana, W [kué], F eke
D.11 *sun*: K nare, MN nar, S nate, E nitá, H ni, I nai/nate, W [loú], F [maiya]
D.12 *water*: K ipa, M ip, S [ikali], E ípa, H iba, I ipa, W [uè], F [hę]
D.13 *outside*: K (k)amaa, M homa, S hamæ, E kamáda, I kamaka
D.14 *yesterday*: K abala, M ɔmbɔła, S ambaneke, E [kwáka], H abe, W abela, F [lao]

Set E generally contains the names of flora and fauna.

E.1 *banana*: K (k)ai, MS ai, S dąį, E saé, H hai, I ai, W [kaká], F [kaputa]
E.2 *meat*: K midi, M mindi, S [mænæ], E miju, H mbirini, I mijuni, W [melépu], F [maiya]
E.3 *pandanus*: K aga, M ank, S ankæ, H anga, I aga

E.4 *sugarcane*: KE wali, M wɔɬ, S weli, E [iyáa], H [tu], I [iya], W [tai], F [sąǫ]

E.5 *sweet potato*: K saapi, M sepi, S [tia], E [áina], H [hina], I [aina], W [modó], F [supuru]

E.6 *taro*: K maa, M mɔ, S mæ, E máa, H ma, I anama/ma, W mɩ̀, F me

E.7 *tree*: KW [repona], M ti, S ti, E ɪ́tá, H ira, I ita, W [yomò], F ira

E.8 *bird*: K yáá, M sɔ, S [ba], E yáka, H ega, I eka, W [inì], F [mena]

E.9 *flying fox*: KE kaima, MS keim, S [ątąna], E saima, H gamia, W kaima, F kaema

E.10 *louse*: KE lema, M em, S læmæ, E rema, H emo, I lemo, W nomò, F [yapani]

Set F lists those stems which potentially take affixes marking person, number, or tense. In E a special suffix occurs (see A. Lang 1973: xxviii ff.).

F.1 *to eat*: K na, M ne, S na, E negé, H ná, I naa, W nakò, F anene

F.2 *to catch; to hold*: K sapira; ripinya, M wapiɔ, S minæ, E minyir, H yu bia, I mina, W [motòko], F [maka are]

F.3 *to come*: K ipu, M epe, S ipu, E epegé, H ibu, I ɪ́pu, W [nokò], F apere

F.4 *to die*: KE koma, M ome, S homæ, E kumi, H homa, I oma, W [túko], F [akure]

F.5 *to do*: KW pa, M pi, S pæ, E pigɪ́, H bia

F.6 *to give (to 1st person)*: K gi, M nge, S kitæ, E maiigi, H ngɪ́, I gii, W [meteko], F [akare]

F.7 *to hear*: K paga, M pɔnge, S opuæ, E [sirámo], H [hale ha], I [ale a], W [yatekò], F [kairaka]

F.8 *to hit*: KE tya, M le, S litæ, E takɪ́gi, H ba, I laa, W [witiko], F [alure]

F.9 *to lie down*: KE patya, M pɔle, S peliæ, E [paregé], H pàlia, I pali, W pitɪ́ko, F [aware]

F.10 *to talk*: K la, M ɬe, S alæ, E re, H la, I laa, W [wa oko], F [someraka]

F.11 *to see*: K ada, M ɔnde, S handæ, E kadege, H hàndá, I ada, W eneko, F [asere]

F.12 *to sit*: K pira, M pete, S pilæ, E petegé, H birá, I piti, W [mekó], F akaiye

F.13 *to stand up*: K reka, M tikɔ, S tiæsæ, E kategé, H [heya], I [ata], W [kakò], F [ale]

F.14 *to go*: K pu, M pe, S pu, E paegé, H pú, I puu, W [yakó], F [korakare]

Set G generally includes stems which may occur as qualifiers or followed by a limited set of verbs, such as *make*, *say*, and *hit*. The latter are called pro-verbs in A. Lang (1971:81).

G.1 *bad*: KE kolea, M ko, S hoke, E koó, H ko, I koo, W póko, F [watikisa]

G.2 *big*: K adaa, M ɔndɔ, S [tieke], E adáke, H [timbu(ni)], I ada(ne), W [tubeà], F kara

G.3 *dark, colored*: KW pobore, M pɔmbete, S [punu pæ], E [pupúti], H [mindi bi], I pobotene, W [lieneá], F [pikirisa]

G.4 *cough*: KE koro ta, M ot ɬe, S hoto alæ, K kóto re, H ko la, I koto laa, W [totona óko], F [yiyoko ane]

G.5 *dry*: K kaapu ta, M kæpi, S hapu lae, E kéké regé, H [yo bira], I kapu, W [kaù toko], F [parosa]

G.6 *good*: K epe (ta), M epe, S epeke, E épé, H [bayale], I [wayu], W epe tèko, F [kotesa]

G.7 *laugh*: K giri ta, M kit ɬe, S ki talæ, E gi irámo, H [oba timbuni ha], I gitu, W [yáu toko], F [takuane]

G.8 *new*: KE pena, M wene, S panake, E enége, H gahange, I wenene, W péne, F [kawe]

G.9 *not*: K dia, M ind, S diæ, E daá, I jia, W [mená], F [wai]

G.10 *heavy*: K kedaa (pea), M kend, S kændæ, E kédá, H gendabi, I keda, W kedá toko, F [umisa]

G.11 *pain*: K radaa (pia), M tand, S tanda, E tádá, H tandaga, I tandaka

G.12 *sore*: K rere (pia), M ter, S tete, E téte, H dere, I tete

G.13 *stink*: K pugu (pia), M punk, S punku mi, E púgú pigí, H ngu ha

G.14 *white*: K kaake (pia), M aiki pi, S hake pæ, E [ipaí], H pagabua, I ake pene, W áke tanea, F pakaesa

G.15 *yellow*: K ambu, M ɔmb, S [hami pae], E ábwa, H ambuabi, I abua, W [kakai pagènea], F [kiamesa]

G.16 *run away*: K alo pu, M aɬama pepe, S aí pulæ, E ára pígi, H [ge raila], I pekala puu, W [teia pea pokò], F [foaka apure]

G.17 *spit*: KW sope raa, M [nemake], S dopi tæ, E sopo kári, H [hamiaga], I soo laa

G.18 *vomit*: KW maaku ra, M mak, E myúku talyígi, H magu tagu wia, I miagu tagua

2.4.2.3. PROTO-ENGAN PHONEMES

In this section some proto-phonemes are tentatively suggested on the basis of the most common regular sound correspondences illustrated in the cognate sets above.

*mb : A.2, A.14, B.8, D.14, G.3, G.15

*nd : A.4, D.1, E.2, F.11, G.2, G.9, G.10, G.11

*ŋg : A.5, A.8, D.5, F.7, G.13

*k : A.3, A.6, A.11, A.18, B.1, B.3, B.5, D.7, D.13, E.1, E.9, F.4, G.1, G.4

NB: *k probably had an allophone [*kx] initially: note A.3, etc. where *kx > k, h, or ø. At present *h is not suggested.

*p : A.13, A.16, A.17, B.4, C.2, C.12, C.14, C.15, C.16, D.9, F.3, F.7, F.9, F.12, F.14

NB: *p was probably a fricative and voiced intervocalically.

*t : A.2, A.10, C.15, D.5, D.8, D.11, E.7, F.12, G.11, G.12

NB: *t may have been a complex phoneme initially; medially in present day K it is always /r/.

*m : A.1, A.12, A.15, B.2, B.6, D.9, D.13, E.6, E.9, E.10, F.4

NB: there is some evidence that *my may have also been a separate phoneme, e.g. G.18. Alternatively many of the phonemes may have added palatalisation as a separate feature.

*n : A.9, C.1, C.7, D.2, D.10, F.1, G.8

NB: also on many historical suffixes as *-ne, e.g. A.7.

*sy : A.1, A.5, A.17, C.9, D.6, E.8

NB: In the following section on pronominal sets additional comments are made. The phonetic characteristics of this proto-phoneme may have been [*s̻ʸ].

*ɬ : A.7, A.16, B.5, B.8, C.16, D.14, E.4, E.10, F.8, F.10, G.17

NB: In the following section the proto-phoneme *lʸ is suggested. The phonetic characteristics may have been [*ɬ̻].

*w(?): A.9, B.9, E.4

NB: In some examples, such as G.8, w- corresponds to p. It may be that a proto-phoneme with phonetic characteristics of [*pʷ] would care for *w and *p. Further evidence of labialisation can be found in sets such as A.3

The proto-vowels are sometimes difficult to identify due to morpho-phonemic vowel harmony. However, by identifying *-ne and *-kV as historical suffixes the basic stems can be compared with greater certainty and on this basis the following vowels are posited.

*i : A.3, A.10, A.11, A.14, A.16, B.5, B.7, B.8, C.1, C.2, C.13, C.14, D.12, E.7, F.3, F.6., etc.

*u : A.3, A.4, A.12, A.13, D.2, D.6, D.9, F.1, G.13, G.15, G.18

*e : A.2, A.6, A.7, A.8, A.18, C.7, C.15, D.7, E.10, G.10, G.11

*o : A.9, C.3, C.6, C.15, C.16, F.4, G.1, G.4

*a : A.1, A.4, A.5, A.6, A.8, A.15, B.2, B.4, B.5, B.6, C.8, C.10, etc.

*a^{i} : A.1, A.17, B.1, B.3, C.12, D.4, E.1, E.9

NB: In present day languages this often corresponds to /e^{i}/ or /æ/.

There has been no discussion in this section of phonemic tone or vowel length. Most often vowel length is the result of a loss of a contiguous consonant or whole syllable. Tone often disambiguates present day minimal pairs which have arisen from diverse proto-forms, e.g. KW **áá** *man* is from ***akaɬi**, while **àà** *foot* is from ***ange**.

A great deal more work remains before the Proto-Engan sounds can be established with complete certainty. The present work, hopefully, is at least a start in the proper direction.

2.4.2.4. PRONOMINAL SETS

In this section it is shown that two sets of free pronominal forms occurred in Proto-Engan. The pronouns of **Wiru** do not identify easily with either set, although those of **Wiru** bear some relationship to one set in **Fasu**.

Abbreviations which have not been used elsewhere are: P = **Pinai** (a language located near the Yuap River headwaters, but related to **Enga** - see Bulmer 1968),[1] EL = **Lembena Enga**, EM = **Lapalama Enga**, EG = **Gadio Enga**, EK = **Kyaka Enga**, ER = **Raeapo Enga**.

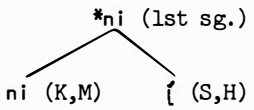
The first proto-set of pronouns is as follows:

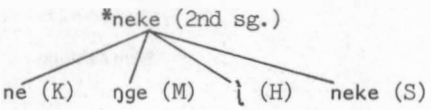
SET A

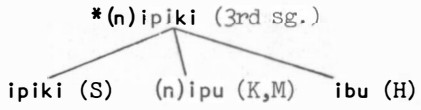
	Singular	Dual	Plural
1st	*ni	*syake	*nyiki
2nd	*neke	*nipiliki	*nimiki
3rd	*ipiki ∿ *nipiki	*nipiliki	*nimuki

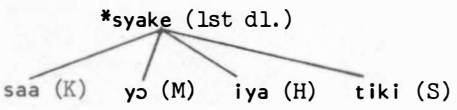
Set A is represented in the present day languages of S, K, M, and H as follows:

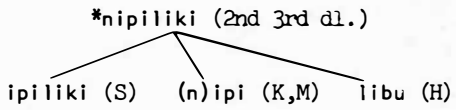
[1] Editors' note: D.C. Laycock (see 2.11.3.5.1. in this volume) classifies Pinai as a member of the Sepik-Ramu Phylum and includes it into the Piawi Stock in the Yuat Sub-Phylum in it. Its apparent link with Enga seems to be attributable to extensive loans from Enga, some of which may be quite archaic and therefore of considerable value to comparative work as attempted in this chapter.

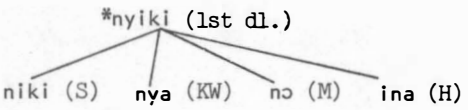


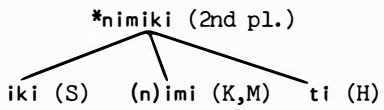


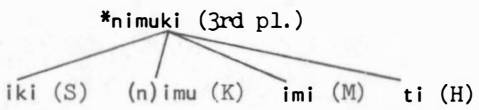












Set B is morphologically more complex than Set A and is represented in present day dialects of E, but also in P and I. In this set person was marked as follows:

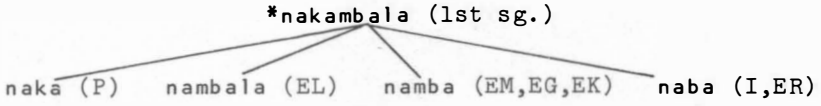
*na- 1st person
*ni- 2nd person
*e- ∿ ñe- 3rd person

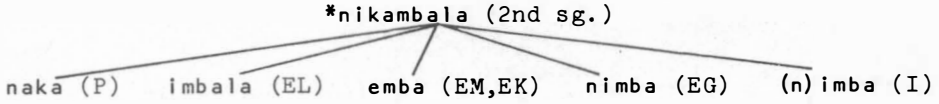
The 1st person forms of P also clearly indicate that it is also possible to consider *nakʸa ∿ *naka, *nikʸa ∿ *nika, etc. as basic forms.

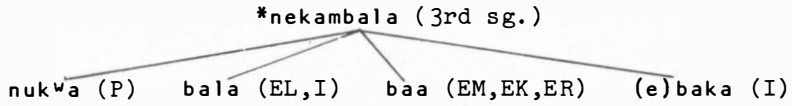
The form *-lʸi- ∿ *-li- appeared to focus "non-singularity", perhaps in association with *-kʸa- ∿ *-ka-.

Finally the forms *-bala ∿ *-mbʷala may have marked some syntactic function. On the other hand these may have been derived from some basic set of numerals.

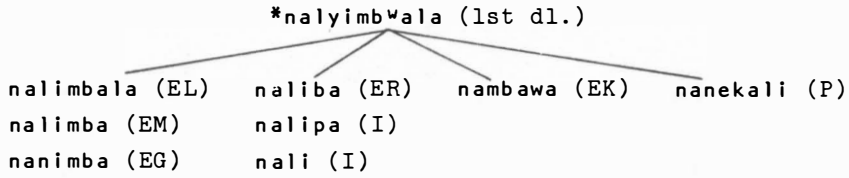
Examples from Set B now follow.



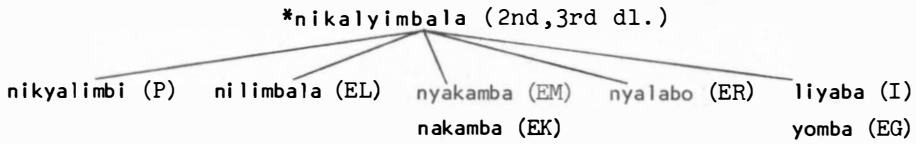




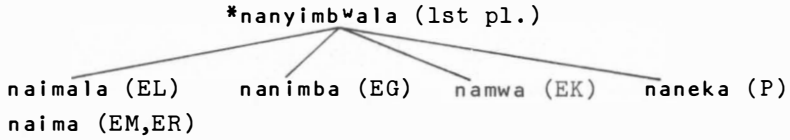
In baa, it is quite probable that an intermediate stage such as the following took place: bala ebaka → baa



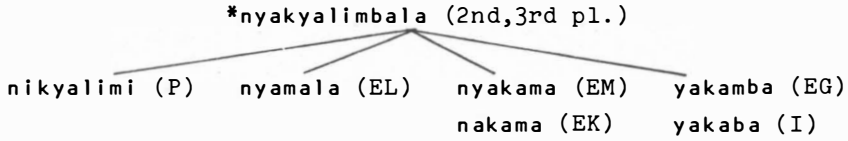
The P forms suggests that a reconstruction of *nakalyimbʷala might be necessary. The 2nd and 3rd dual suggest the same.



The listing of EG below I (above) is meant to suggest that an intermediate stage took place.



The P form is unaccounted for in the reconstruction.



In the above forms it is possible that the 1st dl. and pl. forms were identical in Proto-Engan.

On the basis of the reconstructed pronominal forms, and somewhat tentatively, a series of palatalised phonemes seems evident: /*ny, *sy, *ky, *ly/, but not *y. Evidence in the shape of *$^{m}b^{w}$ may suggest labialised phonemes as well. However, both series may prove to be conditioned by contiguous vowels.

In addition, and on the basis of pronominal forms alone Proto-Engan probably had /*p, *k, *n, *l, *m, *^{m}b, *i, *e/ and /*a/.

The comparison of Wiru with either proto-set is not instructive. However, Wiru and Fasu free pronouns seems to have a closer affinity, as demonstrated in the following table (where the possible Proto-south central forms as suggested by Voorhoeve are also included):

	Singular			Dual		Plural		
	W	F	P-SC	W	F	W	F	P-SC
1st	no	ano	nV(p)	tota	eto	toto	isu	ni(p)
2nd	ne	ne	$^{t}_{k}$V(p)	kita	teto	kiwi	re	$^{t}_{k}$i(p)
3rd	one	e	yV(??)	kita	teta	kini	i	yi(p?)

Clearly the inclusion of Wiru (or Fasu) in Proto-Engan is tenuous on the basis of the free pronominal forms as reconstructed in this section.

It would not prove surprising if Set B includes numerals such as *kyambala, *lyimbala, *kyalyimbala or simply *mbala. On the basis of the length of the forms alone this seems quite likely.

Presently the task of suggesting some reconstruction involving Set A and B seems formidable. Probably two proto-sets were present in the parent language; however, some intermediate proto-stage would also be postulated to solve some of the problems - if it is necessary to reconstruct one main set.

2.4.2.5. SOURCES

Acknowledgement is gratefully given to the following for unpublished materials:

ENGA

Unpublished wordlists: **Kyaka Enga** (Garth Manning, Baptist Mission, Baiyer River); **Lembena Enga** (W. Brown, Baptist Mission); **Raeapo Enga** (O. Hintze, New Guinea Lutheran Mission), **Gadio Enga** (R. Lang, New Guinea Research Unit, Australian National University.) Also used: **Wabag Enga** (K. Franklin, S.I.L. (Summer Institute of Linguistics)).

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Unpublished wordlists: (D. Moseley, A.P.C.M., K. Franklin, S.I.L.)

WIRU

Unpublished wordlists: (H. Kerr, S.I.L., K. Franklin, S.I.L.)

KEWA

Unpublished wordlists: **West Kewa** (N. Imbrock, E.L.C.O.N.G. (Evangelical Lutheran Church of New Guinea), K. Franklin, S.I.L); **East Kewa** (K. Franklin, S.I.L.); **South Kewa** (K. Franklin, S.I.L.)

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2.4.3. THE RELATIONSHIP OF WIRU IN THE SOUTHERN HIGHLANDS DISTRICT TO LANGUAGES OF THE EAST NEW GUINEA HIGHLANDS STOCK

Harland B. Kerr

2.4.3.1. INTRODUCTION

Since the establishment of the East New Guinea Highlands Stock (Wurm 1964), the position of Wiru within the West Central Family has been in doubt. Its most immediate neighbours are the eastern dialect of the Kewa language group of the West Central, and Imbonggo, a dialect of the Hagen (Medlpa) language group of the Central Family of the stock. They meet near the outrider north-western Wiru settlements which are on the southern foothills of Mt. Yalibu. Kewa meets Wiru along its western boundary down to the Erave River. It is isolated to the north from the Hagen language group by extensive primary forest, and to the east and south by even more extensive zones of primary forest. It is unlikely to be more closely related linguistically to any other significant language group than either of these two geographically close, but linguistically remote neighbours.

This paper presents typological and preliminary comparative formal evidence in favour of the recognition of Wiru as a regular Highland Papua New Guinea language with many of the most salient structural characteristics of languages within the stock, and sufficient probable cognates shared with languages of the West Central Family to justify the assumption that this reflects genetic relationship rather than convergence and borrowing.

2.4.3.2. SIGNIFICANT TYPOLOGICAL PARALLELS WITH LANGUAGES OF THE EAST NEW GUINEA HIGHLANDS STOCK

Preliminary comparative studies were carried out in the mid 1960's in the Eastern Family of the stock (McKaughan 1973:694-738, Bee 1973b:739-68, Kerr 1973a:769-99). Internal reconstruction of bound subject pronoun

Kerr, H.B. "The Relationship of Wiru in the Southern Highlands District to Languages of the East New Guinea Highlands Stock". In Wurm, S.A. editor, *New Guinea area languages and language study, Vol. 1, Papuan languages and the New Guinea linguistic scene.* **C-38:277-298**. Pacific Linguistics, The Australian National University, 1975. DOI:*10.15144/PL-C38.277*

paradigms in a dialect of the largest language of the family, the Obura dialect of Tairora, revealed a systematic internal structuring of the bound subject pronoun system which, in the light of evidence from other languages, reflected a proto-system at least as old as that from which the Eastern and East Central Families have developed, and possibly as old as the proto-language from which the majority of the families of the stock have originated (Kerr 1973b:598-624). This indicates that, as in Wiru, typical of languages of the 'nasalisation belt' in which it occurs (Franklin and Voorhoeve 1973:4.1), the forms of the bound subject pronoun system basically denote the person or the number of the subject, but not both. What seems to have been the product of extensive analogic creation stemming from the inherent asymmetry of the bound subject paradigm of the proto-language has obscured this fact in most of the daughter languages. This will be dealt with in detail in a later paper. But the most essential features of the system persist, most overtly in the East Central Family of the stock where the formal evidence shows that the personal pronoun system of Bena-bena and Gahuku is a bipolar system with two categories of pronoun first discovered and named by Young the monofocal and polyfocal categories (Young 1964:47 ff., Deibler 1963:31-5). The full significance of this dichotomy in terms of its ramification through the total grammatical system is dealt with in detail in a comprehensive analysis of Wiru grammar in process of completion for publication. Both typologically and in certain crucial formal features the Wiru bound subject pronoun system has much in common at an abstract level of deep structure with languages of both the Eastern and East Central Families. Despite substantial superficial differences the same basic system underlies the bound subject pronoun paradigms of Kewa in the West Central Family described by Franklin (Franklin 1971:39-40). Formal evidence which cannot be presented within the required limits of this summary paper indicate that the parallel is not just typological but reflects genetic relationship.

The superficially most obvious reflection of the bipolarisation of the personal pronoun system of languages within the stock has caught the attention of many linguists. Wurm noted that apart from one of the most striking characteristics of languages of the stock, the pattern of sentence-medial forms, "Another important feature almost universal among the languages of the stock is that one subject marker is found to denote the second and third person dual subjects, and one the second and third person plural subjects." (Wurm 1964:82). In other words, the contrast between 2nd and 3rd person breaks down in non-singular subject contexts. Like most of the languages of the Eastern Family within the stock, the Wiru bound subject (though not the free subject and object or free

possessive) pronoun system makes no distinction between dual and plural. But there is a consistent dichotomy of all personal pronoun systems into two sectors which are congruent with the monofocal and polyfocal sectors (Kerr 1963:157-66).[1] The polyfocal sector is characterised by the same formal feature for 2nd and 3rd person non-singular, and is characteristically associated with the vowel i.

The reason for the correlation between the break-down of contrast between 2nd and 3rd person in non-singular contexts and the bipolarisation of the personal pronoun system is implicit in an earlier paper (Kerr 1973b: 606-9), and will be dealt with in more detail in the monograph on Wiru grammar. It will be shown that this feature (the lack of contrast between 2nd and 3rd person when non-singular), as well as the sentence-medial subset of constructions, and another equally typical feature of languages of the stock, the benefactive construction, are all specific manifestations of the same fundamental system. This degree of systematic parallelism with respect to the most widespread and very fundamental grammatical features among languages of families within the stock, formal evidence previously mentioned, and other formal features in common with languages of the West Central Family to be cited later, favour the recognition of Wiru as an isolated member of a more extensive language grouping with a greater time-depth than that underlying the relationship between the families of the East New Guinea Highlands Stock. The existence of such extensive genetic relationship among languages too far separated in time to permit positive proof of their genetic relationship by the standard comparative methods had been suspected since the earliest classifications and been confirmed increasingly by more extensive and intensive studies since then.

Verbs in all languages of the Eastern Family fall into three morphophonemic classes according to the morphophonemic behaviour of the root vowels. Among all but one of several languages in other families within the stock for which the author had the relevant information, Gahuku and Bena-bena of the East Central (Young 1964, Deibler 1963), Kewa of the West Central (Franklin 1971), and Wahgi of the Central Family (personal communication, D. Phillips) have three basic morphophonemic classes of verbs.

Wiru also has three basic morphophonemic classes of verbs, one characterised by nasalisation of the vowel sector, which becomes a nasal consonant homorganic with a following stop when the first segment of the immediately following morphemic unit is the bilabial stop /p/ or the velar stop /k/. The other of the two smaller classes is characterised by a root final segment -tV, which has no independent morphemic status and a variable vowel with the same morphophonemic properties as the

variable vowel of two other highly functional forms. The morphophonemic behaviour of the -tV segment is similar to that of the root terminal segment -la which characterises one of the three basic morphophonemic classes (the L class) of Kewa verbs. Like the Wiru -tV segment, the Kewa -la segment is dropped with immediate imperative constructions, future tense in final verbs, and with the suffix -ma, which like the homophonous Wiru suffix -ma, attaches to the root of the first of a sequence of two verbs with the same subject, indicating that the actions of the two verbs are carried on simultaneously. It is also omitted, like the Wiru -tV segment, with medial purposive verbs. It is retained, like the Wiru segment, in verbs with simple past tense, and in benefactive constructions.

The grammatical features shared with Kewa also point to the genetic relationship of the two languages. The agentive subject of transitive verbs and the instrument are marked by the enclitic -me, "a very common Highland (perhaps proto-Papuan) typological feature". (Franklin and Voorhoeve 1973:4.5). The Wiru enclitic -pala is one of two limited co-ordinating forms and also marks a person in accompaniment role like the probable Kewa cognate -para with almost the same function. General interrogative constructions are marked by a sentence final particle pe as in Kewa. A probably related form fe has the same function in Binumarien of the Eastern Family, and the allomorphic variants fi and pi fill the same role in Bena-bena of the East Central Family.

2.4.3.3. THE RELIC INALIENATION OR INTIMATE ASSOCIATION SEGMENT

A relic feature of Wiru nouns exhibits the same morphophonemic behaviour as a possible cognate form in Enga, the largest language group in the West Central Family to which Kewa also belongs. It has its counterpart in many languages inside and outside the stock within the 'nasalisation belt'.

Early in the collection of data in the Wiru language group the author noted a frequently appearing, but obviously fossilised, recurring partial with the abstract form -nV as the terminal feature of nouns specifying body parts and a term with intimate person association, i.e. ibini *name*. The following are cognates of such Wiru words in other languages within the West Central Family which confirm the existence of this relic segment: W[2] ibini *name*; K ibi,[3] M mbi, S biki, H mini; W lene *eye*: K le, S leke, H re or de, I lee or lene, E reŋge; W kabunu *mouth*: H ne hambu, E kambu both meaning *mouth*, and the following words meaning *lip*, K abulu, M hambulu, S hambiliki, H hambu; W wane *cheek*: K pae, M paiyo, S pake, H pe.

The Enga equivalent of the Wiru relic segment -nV, the segment -ŋgV, is an obligatory component of all kinship terms of reference, e.g. pariŋgi *grandmother*. Since the root of three of these kinship terms

occurs without the terminal segment -ŋgV in terms of direct address, it is assumed that, at least for this sector of the language, the suffix is a viable form (Meggitt 1963).

The morphophonemic rules which determine the variable vowel of the Enga form -ŋgV are the same as those which once operated on the variable vowel in the Wiru relic segment -nV. The variable vowel becomes homophonous with the vowel of the immediately preceding syllable, unless it is a, when the variable vowel becomes e. The following additional examples from Wiru and Enga illustrate this: Wiru timini *nose*, pono *forehead*, wagene *shoulder*, punene *gall bladder, urine bladder*, lamene *ankle*, tono *bone*, tatono *palm of hand*, tekene *female genitals*, kiyane *vein, sinew*, yomini *shadow, spirit of living person*, konowane *lungs*, wadini *knee cap*, lawene *kidneys*, modono *ribs*, adene *penis*, pakunu *jaw*, putigini *deltoid muscle*; Enga kiŋgi *hand*, neŋge *tongue*, maŋge *neck*, raŋge *shoulder*, moŋgo *leg*, yumbaŋge *grandfather, grandchild*, takaeŋge *father*, apaŋge *mother's brother*, endeŋge *mother's sister*, ikiniŋgi *son*.

The same morphophonemic rules operate on the variable vowel of the three following forms in Wiru; the directional suffix -tV which immediately follows the spacial pronoun roots, and which also immediately follows verb roots, and in this context is best glossed *after*; the change of subject sentence medial suffix -lV, which indicates that the subject of the verb following in the same sentence is not the same as the subject of the verb to which it attaches; the segment -tV, previously mentioned, which is the terminal sector of the root of the class of verbs characterised by it.

Since the Enga form -ŋgV is a feature of both body part and kinship terms, we note that a terminal segment -ne resembling the relic segment -nV is a feature of terms of reference denoting kin of the nuclear family, and mother's brother: etene, nine, wamene, laine, awene *(someone's) father, mother, parallel sex sibling, cross sex sibling* and *mother's brother* respectively. The terms wamene and awene have a root sector which can stand alone when used in direct address, ame and awa respectively. Grounds for correlating this terminal form -ne with the personal possessive suffix -nE[4] and the relic segment -nV must be left for another paper.

2.4.3.4. PERIPHRASTIC VERB EXPRESSIONS

Periphrastic verb expressions are characteristic of languages within the East New Guinea Highlands Stock, e.g. Bena-bena (Young 1964:78 ff.). An initial uninflected word which is the lexical nucleus of the expression and is commonly limited to these or derived expressions, is followed by a verb root which is essentially a dummy root, with little if any lexical function, to which attach regular verb affixes. Such roots, which are

limited in number, also function as regular verbs in non-periphrastic constructions in which they are both the lexical and formal nucleus of the verb expression. In Wiru, with very few exceptions, the roots are tV- and V-, two of a very limited set of verbs with a variable root vowel, which as independent verbs mean *to do* and *to utter* respectively. In cognate periphrastic expressions in languages within the West Central Family a verb tentatively reconstructed as *pi- *to do* equates with the Wiru verb tV-. Wiru V- *to utter* has its counterpart la *to speak* in periphrastic constructions in Kewa. Where in the following examples of cognate expressions a form in another language seems to be a cognate of the uninflected Wiru word of the periphrastic construction, but is not listed in the available information with a following verbal form, it is listed as an independent word at the end of the set of cognate expressions. Many of the Wiru periphrastic expressions, as in other languages, are impersonal, though a person functioning as a pseudo subject may be added to the expression, e.g. yaa toko *it is shameful, there is a sense of shame* (literally *shame does*), no yaa toko *I feel shame*.
1) W kau toko *it is dry*: K kapu leae, WK kapu ta,[5] M ke'pi, S hapu la:me, SM kapu, I kapu, E sapu. 2) W tape toko *it is fine (weather)*: K pani pea, M pen, I pana or panyu, E paina. The Wiru word tape is possibly a combination of the word ta *land, space, rain*, and a terminal segment related to the initial segment of the uninflected words cited above. 3) W keda toko *it is heavy*: K kedaa pia, M kend pi, H genda bi, I and E kenda. 4) W tete toko *it is painful*: K rere pia, H dere, I tete, M ter which mean *pain* and E tete *abrasion*. 5) W yaa toko *it is shameful*: K yalaa pia, M sal pidl, S yalæ pi-. 6) W yene toko *there is sickness*: K yaina pi, E yaini piŋgi, M sen *sickness*. 7) W tege toko *it is wet*: K reke leal, WK seke pia, M seke rana laapo, S tenke la:la:me, E tombe reŋge. 8) W ake tanea *it is white* (literally *white is done*): K kaake pia, S hake pa:la:me, M akipi or akepi. 9) W totono oko *he coughs* (literally *he utters a cough*): K koro ta, M ot ke, S hoto ala:me, H ko la, I koto laa, E koto reramo. 10) W topo toko *he exchanges (goods, words etc.)*: K ropo pa, M top pi, I topo pii. 11) W naga toko *he files something*: K naga pa, M naŋga pi, E naŋga piŋgi, I naŋga. 12) W kitu toa kako *it rubs itself (against a pole)*: K kiru pia, H duru bia, E kindu piŋgi which all mean *he scratches someone*. 13) W nunu oko *he kisses someone* (literally *he utters a kiss*): K nunu laa, S nunu pi-, I nunu piŋgi, E nunu piŋgi, M nunu.

2.4.3.5. KINSHIP TERMS

The substantial percentage of Wiru kinship terms which have probable cognates in languages of the West Central Family is reminiscent of the

situation in the Eastern Family where Bee (1973b), after examining some 1,000 sets of words from all languages of the family, found only 60 fair sets of cognates. Among them an unusually large percentage were body part or kinship terms.

In Wiru and languages of the West Central Family the root of some kinship terms differs according to whether the kin specified by it are being addressed or referred to. In some lists below probable cognates from Fasu (F) and Foe within the 'nasalisation belt' but outside the West Central Family will be added at the end of a given series.
14) W atai *father* (a and r):[6] K aaraa (r), M (Megi) ara, S ateke, E takaeŋge (r), F ata (a). 15) W ãua *mother* (a): K ama, M am, H ãya, I ama, E mamea, F ama, Foe hũa (all terms of address). 16) W nine *mother* (r): K agi, M iŋgi, M (Augu) anji, M (Megi) eŋgi, S inkiki, H ĩdya, I agini, F kaiya (all terms of reference). 17) W mãe *father's brother* (a and r), mãeo (a): K mai, M mæ, S mai. 18) W ame *parallel sex sibling* (a), wamene (r): K ame, M ame, WM hæme, S hameke, H hamene, I amene, E kaimeo (a), kaiminiŋgi (r), F hame, Foe wame. 19) W awa *mother's brother* (a), kawa or awene (r): K awa, H ayuwa, I auwiya, E awea (a), apaŋge (r), F auwa (a and r), Foe abiya. 20) W papa *mother's sister* (a and r), *father's brother's wife*: K papa (a and r) *mother's sister* and *father's brother's wife*, M pap *father's brother's wife*, I papa *father's brother's wife*, E pape (a) *mother, mother's sister*, F papa *cross-sex sibling*. 21) W kaua (a and r) *grandfather, grandchild of male ego, father-in-law, son-in-law*: K kakua (a and r) same range of function as Wiru kaua, E uase (a) *grandfather, grandchild of male ego, very old male affines of first ascending generation, very young female affines of first descending generation*, F kaua (a and r) *grandfather*, Foe tãũwa *grandfather*. 22) W kale *reciprocal term between male ego's brother's wife and female ego's husband's brother*: K kate same function as Wiru term. 23) W aali *husband* (r) aana or kaane (r) alternate terms for *husband*: K aani, M oli or ol, S haliki, H agalini, E akariŋgl. 24) W aali *man*: K all, WK aa, M ol, NM aadl, S hali, H agali, I akali, E akari.

The Wiru and Kewa kinship systems not only have a substantial number of terms in common, but are virtually congruent systems.[7] The only major difference is the use of a single root ame in Wiru in the term for both male and female parallel sex siblings. In Kewa as in Enga the cognate root is the stem of the term or terms applying to male parallel sex siblings, while another root denotes female parallel sex siblings.

The cognate terms kaua and kakua[8] in Wiru and Kewa respectively have the same wide range of function. Within this range they are used reciprocally between a grandfather and his grandchildren, and between a father-in-law and his son-in-law. The equivalent female terms W aue and

K **aya** are almost certainly cognates.[9] Their range of function is equivalent to that of the male terms. Within this range, like **kaua** and **kakua**, they are used in address reciprocally between a grandmother and her grandchildren, and between a mother-in-law and her daughter-in-law. The same female roots, like the male roots, are used in referential terms. In referential use the Wiru female root **aue** attaches a prefix-like element **k** as in **anu kaue** *my grandmother, my mother-in-law*, etc.

The use of the same root in terms for cognate kin of the G+2 generation and affinal kin of the first ascending generation (G+1) is reminiscent of the kinship terminology of languages of the Eastern Family which stems from the proto-language (Kerr 1973a:798).[10] A similar system is a feature of the Kuman kinship system of the Wahgi language group of the Central Family (Reay 1959:xv-xvi). It is also a feature of the kinship system of the Daribi, outside the stock and separated from the Wiru to the west by an extensive zone of primary forest. The phoneme sequence **wai** when nasalised, **wãĩ**, denotes (within an extensive range) father-in-law and son-in-law. The same sequence with a high tone (among other extended usages) is used between and for a grandfather and his grandchildren (Wagner 1967: 176-7). A relic of this feature is also apparent in the Enga kinship system where the terms (address and referential) used between and for a grandfather and his grandchildren are extended with a male ego to very old male affines of the first ascending generation, and very young female affines of the first descending generation. Similarly the terms of address and reference used between and for a grandmother and her grandchildren are extended with a female ego to very old female affines of the first ascending generation and very young female affines of the first descending generation (Meggitt 1963:193,195). With reference to the difference in tone of the segmentally identical Daribi kinship roots cited above, evidence from Tairora, in the Eastern Family referred to above, shows that different closed system forms which almost certainly derive historically from the same form have over time come to differ by the development of different tone patterns. Specifically, the identity of the rather irregular 1st person singular and 3rd person singular bound subject pronouns of pattern 4 paradigms (Kerr 1973b:615) almost certainly indicates their origin from the same historic bound subject form. A reasonable hypothesis has been suggested to account for this. According to Vincent (personal communication), however, these segmentally identical 1st person singular and 3rd person singular bound subject pronouns in combination with the verb root produce verbs with identical segmental form but different tone patterns.

In the Eastern Family the difference in usage (stemming from the proto-system) of the same root for the term for grandfather on the one hand,

and the term used reciprocally between a daughter-in-law and her parents-in-law on the other hand was achieved by multiple classification of the root within a morphophonemic classificatory system which recognised three classes, a glottal class symbolised by root terminal Q (i.e. ʔ), a nasal class symbolised by root terminal N, and a vowel class symbolised by root terminal V and in effect morphophonemically unmarked. These three morphophonemic classes were features of the proto-language, though the morphophonemic system was only viable in one of the two major subgroups of the family (Bee 1973a:230 ff. and Bee 1973b:739 ff.).

Multiple morphophonemic classification of the same root with consequent derivation of more than one kinship term was also a feature of the proto-roots ***Waa-** and ***naa-** which as V class roots signified with their suffix (which reflected the morphophonemic classification) *older brother* and *older sister* respectively, and as Q class roots with their suffix (which reflected the morphophonemic classification) signified *husband* and *wife* respectively. It now seems that the same two roots basically denoted *man* and *woman* respectively. Outside the kinship system the morphophonemic classification was essentially (as would be expected) entirely arbitrary, but within the kinship system it seemed to have semantic overtones, V class kinship terms denoting a superordinate category and Q and N class kinship terms a subordinate category of kin. However, there is evidence that forms other than kinship terms may also be involved in multiple classification with resulting shift in lexical function, e.g. the Gadsup form **-uka** (Frantz 1973:428-9).

In the light of the above we note that the term for *husband* in languages of the West Central Family is the same as the term for *man*, except for the addition of a relic form of the type **-kV**, **-nV** or **-ŋgV** according to the language. The single term **aali** denoting both *husband* and *man* in Wiru is a cognate of the root sector of the terms in the West Central Family of languages. The difference between them is not registered by a relic form in Wiru. However, in Kewa, whose kinship system is so remarkably congruent with the Wiru kinship system, the difference in the term for *man* **ali**, which is a reflex of a putative West Central Family proto-term ***akali**, and the term for *husband* **aani** involves the replacement of the medial consonant **l** of the former term by the nasal consonant **n** in the latter term. A similar process may underly the relationship between the Wiru term **aali**, which most commonly and specifically denotes *man*, and the root of the referential term for *husband* in Wiru, **aane**. A similar type of formal relationship exists between the term for cross cousin of either sex and the term used between sisters respectively in the following paired examples: K **aki : ai**, M **haki : he**, I **akini : aini**, E **kakiŋgi : kaiiŋgi**.

This type of formal relationship between two terms which obviously share a semantic component is typical of another closed system set of terms, personal pronouns, free and bound. It is a feature of languages in the Eastern, East Central, West Central and Central Families of the East New Guinea Highlands Stock. The formal-semantic relationship of this type is a feature of the 1st person singular and 1st person plural pronouns of the monofocal sector, and the 2nd person dual and 2nd person plural, 3rd person dual and 3rd person plural pronouns of the polyfocal sector of the personal pronoun system. It is illustrated by the following examples: **Eastern Family: Waffa** free personal pronouns 1st person singular and 1st person plural respectively: long subject forms **nneenno : teenno**, short object forms **nni : ti**, short subject forms **nna** or **nne : ta** or **te**. **East Central Family: Bena-bena** free personal forms 1st person singular and 1st person plural respectively **nani : lali**. Similarly in Kamano **nagra : tagra**, in Kanite **nakaya : takaya** and in Siane **namo : lamo**. The corresponding 2nd person dual and 2nd person plural free personal pronouns in the same languages are: Bena-bena **letali : lenali**, Kamano **tanagra : tamagra**, Kanite **tanaʔkaya : tamakaya**. The 3rd personal dual and 3rd person plural pronouns for the last three languages are similarly **etali : enali**, **yanagra : yamagra**, and **anaʔkaya : amakaya**. In Wahgi of the Central Family in which the free personal pronoun system, rather atypically, distinguishes between inclusive and exclusive 1st person non-singular, the semantic-formal correlation obtains between dual and plural number pronouns for all persons. Thus 1st person inclusive dual **kilip**, plural **kinim**, 1st person exclusive dual **kil**, plural **kin**, 2nd and 3rd person dual **elip**, plural **enim**. In Kewa of the West Central Family we find the same feature: 2nd person dual **nipi**, plural **nimi**, 3rd person dual **nipu**, plural **nimu** in the free personal pronoun system, and in the bound subject pronoun system the following example from the present tense set II paradigm typical of all paradigms: 2nd and 3rd person dual **-tepe**, 2nd and 3rd person plural **-teme**. The same type of formal-semantic relationship is exhibited by the 1st person singular and 1st person plural free personal pronouns of Wiru **no** and **toto** respectively.[11]

This feature of personal pronoun systems in Wiru and languages of the East New Guinea Highlands Stock is highlighted since it obviously plays an important part in the derivation of semantically related forms, at least within closed systems, and must be understood if effective comparative studies and reconstruction of proto-forms are to be carried out within and probably outside the stock. The significance of this feature is dealt with in detail in the forthcoming monograph on Wiru grammar.

It is equally important to be aware of the terminal relic form of body part and kinship terms, which appears as -nV in Wiru, and in other languages within and close to the West Central Family as -nV, -kV and -ŋgV.

The system underlying these relic forms appears to have gone through more than one cycle of viability, fossilisation and reviability, as illustrated by the following two sets of cognate words, typical of others.

skin: W yogele, K yogale, E yoŋge, S yonkeleke

mouth: W kabunu, K abulu, E hambu, S hambiliki

The same type of process involving the bound subject pronoun system of the Eastern Family has gone on within at least one daughter language, Tairora (Kerr 1973b).

From these two sets of cognates it would also seem that a form -lV, possibly a morphophonemically conditioned variant of the more common form -nV, should also be recognised as a possible relic form belonging to the same system as the -nV, -kV and -ŋgV relic forms in determining proto-terms in languages of the West Central Family and contiguous zones.

Another relic form which should also be kept in mind in future comparative work is possibly reconstructible from two proto-West Central words, *pu.i.NV *liver*, and *wa.i.NV *shoot for propagating plant species*. The proto-word *pu *urine* with its virtually unchanged reflex in all daughter languages and also in Wiru, together with the Wiru word punene *urine bladder, gall bladder* (an innovation peculiar to Wiru) points to the fact that the proto-word *pu.i.NV was a compound descriptive word (as indicated by its break-up through the interposition of full stop marks) meaning *source of the urine*. Similarly *wa.i.NV probably meant *source of the plant species, e.g. sugarcane*.

From initial observations it seems probable that these relic forms and their association with kinship and body part terms stem from a system whose underlying basic function, which can only be partially captured by the very general term *source*, manifested itself in both agentive and possessive constructions. It is well known that 'agentive' and 'genitive' have much in common functionally and in that the two roles are commonly indicated by the same or similar formal devices. This will be dealt with in a later paper.

2.4.3.6. OTHER WIRU TERMS WITH PROBABLE COGNATES WITHIN THE WEST CENTRAL FAMILY

In conclusion, to justify recognition of a genetic relationship, however remote, between Wiru and the East New Guinea Highlands Stock, we cite the following terms with probable cognates within the West Central Family. The full set of cognates will not be listed since this can be determined from Franklin's paper. However, where a cognate exists in Kewa it will be cited with the Wiru word. Failing such a cognate, a cognate from another language, preferably Enga, will be cited. Where pertinent,

a comment may be made to explain the wider implications of the set of cognates. The examples will be numbered consecutively from the last set of cognates cited in a previous section.
25) *Arrow, bone tipped*: W tapulu, E sapula. 26) *Ashes with glowing coals*: W laga, K taga. 27) *Baler shell*: W tame, E tame. 28) *Bridge* (log lying on ground or spanning small gully): W yoto, K toko, M to. 29) *Buttock*: W tene-lono (means *backside*; tene also functions as an enclitic in certain place names, whose root specifies a distinctive feature of that place, e.g. Kege-tene *place of mud*, Lota-tene *place of the sweet salt water*), K re. 30) *Clothing*: W mamina, E mamini. 31) *Ear*: W kale, K kale or ane. 32) *Fire*: W toe, M sawe. 33) *Food (vegetable)*: W nee, E nee. 34) *Hail*: W tadali palene, E tandake kapa (the Wiru expression is obviously a compound descriptive expression: tadali is probably a combination of the word ta which refers to personalised space, manifested as one's place of citizenship, the source of rain which fertilises crops etc., plus ali, the Wiru term for *man*. The second word palene possibly has for its terminal segment the expression lene which means *eye* in Wiru. The phone n, which is now a component of the prenasalised stop represented orthographically as d in tadali, may be an example of a feature of nasalisation functioning as a relator of an item and its personalised source.) 35) *Handle*: W tedene, K ede, E endenge. (The Kewa and Enga words establish fairly conclusively that the Wiru word tedene carries the relic form -nV. The term handle clearly implies a source-item relationship.) 36) *House: a lean-to overnight shelter etc.*: W tale yapu, I yapata or tuli, E tuli. (This type of house is built as a dream house during an overnight stop.) The Wiru expression tale pitiko *it perches for the night* is a periphrastic expression which indicates that before its more specific use as a dream house, the expression tale meant a temporary shelter, and possibly a rain shelter. As already noted the word ta means *rain*. The word for rain in Huli is dalu and could be related to the Ipili and Enga terms tuli. The Ipili alternate expression for *lean-to hut* yapata could possibly consist of two units, yapa, a cognate of Wiru yapu *house*, for which there is now no independently surviving cognate in Ipili, and the form ta. The proto-word for *rain* in the West Central Family is probably *tai.) 37) *Instructions*: W mane, E mana. (The Wiru term mane also means *incantations*.) 38) *Moon*: W tokene, K eke. (The cognate terms in the other languages suggest that the Wiru term carries the relic form -nV.) 39) *Mound (sweet potato)*: W modo, E mapu mondo. (The Wiru term means sweet potato, but occasionally refers to the mound in which it is planted.) 40) *Mountain*: W kati, K kari. (The Wiru term is used only with named mountains, e.g. kati Yalipu *Mt. Yalibu*. Note that intervocalically the Wiru phoneme /t/, except in a few limited vocalic environments, is manifested by the phone

flap ɾ.) 41) *Paradise: Bird of Paradise species*: W baua, K bakua. (Note the same intervocalic loss of k in the words for *grandfather* W kaua, K kakua.) 42) *Pit-pit: wild species*: W kabe, I kambe, M kombas. 43) *Poison*: W tomo, K romo. 44) *Pole: main pole of house*: W pigi, E piŋgina. 45) *Rain*: W ta, K yai. (Note that proto-alveolar and velar stops preceding the vowel sequence ...a(C)i are commonly palatalised in the daughter languages of the West Central Family.) 46) *Sap*: W page, E ipaŋge. (Wiru page also means *semen*. It is probably related to the first word of the Daribi expression page-bidi. Wagner translates page-bidi literally as *base or cause-man*. It expresses the relationship of a man to his mother's brother. The Wiru term strengthens Wagner's arguments for the type of relationship which exists between ego and kin on his mother's side represented by mother's brother. The same type of structure postulated by Wagner for Daribi society (Wagner 1967) is typical of Wiru, and is amply confirmed by the Wiru exchange terminology.) 47) *Scar*: W kodo, K kodo, E kombe. (Comparison of the Wiru and Kewa cognates kodo ([kondo]) with Enga kombe suggests that they may carry another relic terminal segment consisting of a prenasalised stop plus a variable vowel. Words in Wiru which might carry such a relic segment are: tabe *skin, bark,* kalabe *collar bone,* tobou *head, skull,* wago *head,* ege *little finger,* tatigi *second finger,* pogi *wrist,* kapidi *ear,* ogo *nail, claw.* Other Wiru words with the -nV relic segment not listed previously include pagini *nostril,* kagono *depressed area between shoulder and neck,* mukitini *ridge of nose,* pepetene *knee cap,* kotomane *section of body from neck to upper biceps area,* tigini *trunk of body.*) 48) *Smoke*: W lodo, K lodo. 49) *Tobacco*: W toko, K soko. 50) *Top*: W tali, K trale. (Wiru tali refers to *surface of water, back of animal,* etc.) 51) *Urine*: W puu, K pu. 52) *Wealth*: W kamo, M homa, E kamoŋgo. (The Enga term means *rich man* and has for its Wiru cognate kamo-ago which attaches the male clitic -ago to the term for *riches, valuable goods*. It would seem from this example that the Wiru enclitic -ago ([aŋgo]) *male person* is a reflex of a term in the proto-West Central language.) 53) *Wind*: W pupulege popokako *the wind blows* is a verb expression in which the verb stem popoka- probably consists of the reduplicated segment po and the stem formative -ka. The following are cognates of po : K poo, SM ope, and possibly E pyapu. The Wiru periphrastic expression ipo oko *he whistles* (literally *he utters a whistle*) probably carries the same form. The Wiru term for *spirits of the dead* ipono is possibly derived from ipo by the addition of the now relic segment -nV. Interrogatory communication with the spirit of a recently dead man is said to be carried out by a form of whistling communication.) 54) *Wings*: W pawena, K popaa, S popaake, H babagane, E papa. (From this set of cognates it seems that the terminal segment -na may be a variant

of the relic segment -nV.) 55) *Flame*: W itipono oko. (This Wiru expression is a periphrastic verb expression which means *flames form, it flames*, and may account for the terms for *tree* and *fire* in the dialects of Kewa and South Mendi, which are unique to these languages within the West Central Family. The proto-term for *tree* may be *iti reflected by M ti, N iz, S ri, H iria. From this we interpret Wiru itipono oko as originally iti ipono oko which would mean literally *the spirit of the tree speaks*. The term for *tree*, particularly a tree ready to be used as firewood, and the term for *firewood* are commonly related to the word for *fire*. The proto-word for the West Central Family would seem to be *iti.ta, which combines a terminal element -ta with the term for *tree* *iti. From this it is suggested that the Kewa and South Mendi terms for *tree* and *fire* may have been derived from a compound expression more transparently reflected by Wiru itipono (i.e. iti ipono), *tree*: EK repuna, WK repena, Pole (SK) repena, SM tepon. *Fire*: WK repena, EK repona.)

The following are non-nominal Wiru words (verbs, attributives, etc.) with probable cognates in languages of the West Central Family. All probable cognates will be cited.

56) *Good*: W epeteko, K epe, M epe, S epeke, E epe. (The Wiru term is a verb combining the root epe with the now fossilised -tV segment which is a viable feature of a substantial class of active verbs in Wiru, and a probable fossilised relic among a substantial number of other active verbs. The Sau term epeke indicates that the relic form, which has characteristically been associated with Sau body part terms as in hambiliki *lips*, kerake *ear* and kinship terms as in hameke *parallel sex sibling*, is also a feature of verb-like terms. It may well parallel the function of the Wiru verbal form -tV which is a morphophonemic classifying device, fossilised in such verbs as kete- *to shut*, lutu- *to tie in bundle* (cf. Wiru lu *bundle*), etc., and still viable in others such as witi- *to strike*, mete- *to give*, yate- *to listen*, etc. It should be recalled that the other of the two marked classes of verbs, among the basic set of three classes established morphophonemically, is marked by the feature of root vowel nasalisation in Wiru. There is only a very limited set of roots which stand alone without any verbal inflection in attributive function in Wiru, among them the size roots tube *big*, de *small*, nate *small*, ludu *long, tall* and the root epe *strong*. All occur in construction with the male person enclitic -ago or the male person root aali. The roots tele and epe in such construction yield a relic form k and n respectively, telekali and telekago *strong man*, epenali *a man in his prime*. The size roots yield no such relic form, tube-ago, tube-ali (usually elided to tubago and tubali) *big man*, de-ali, de-ago *small man*, nate ali *small man*. Such relic features should be investigated carefully in all

languages in any attempt to correlate the relic devices and their probable classificatory function in the various language groups inside and outside the stock. It is interesting to note how widely forms specifying 'size' and 'age' constitute a unique subset of forms, sometimes in affixial association with nouns (e.g. Tairora and Gadsup in the Eastern Family of the stock and Kunimaipa of the Morobe District). 57) *New, recent*: W pene. *Fresh, juicy*: W wenea, M wene, S panake, I wenene, E enenge. (It is fairly evident that the last three languages carry the relic segment in their term for *fresh* and *juicy*, further evidence of the extension of the morphophonemic 'classificatory' system represented by these forms beyond the limits of the nominal system of this group of languages.) 58) *Big*: W adaa-, K adaa, M ondo or ando, I ada or adane, E adake. (The Wiru form is the root of a verb meaning *to be sufficient, to be big enough.* Note the recurrence of a terminal 'relic' form with the Ipili and Enga words.) 59) *Big*: W tube ([tumbe]), E timbu or timbuni. (Again note the 'relic' form with Enga timbuni.)[12] 60) *Long*: W ludu, K adaalu, I luu, H lu or luni, E ronde. (The Kewa term possibly combines the word adaa with the form lu. The regular Kewa and Mendi cognates of Wiru ludu are probably rudu and tundu respectively, although both mean *short.* Wiru ludu and tigini *long* and *trunk of body* respectively, both also are used to denote a length of timber etc. Wiru tigini by another extension of its basic function also means *short, a short section.* This suggests that it is possible to reconcile the opposite lexical function of the Wiru word ludu *long*, and the Kewa rudu *short*.)

2.4.3.7. ACTIVE VERB EXPRESSIONS

61) *Eat*: W naa-, K na-, M ne, S nala:me, H na, I naa, E neŋge. (The Wiru verb as in most of the other languages means also *to drink, to bite* and *to burn*.) 62) *Stand*: W ka-, K reka, M tika or tega, H heya, E kateŋge . 63) *Shake, sprinkle*: W tada-, K rada la, M tandale, I tanda laa. (The lexical nucleus of this expression could derive from the proto-term for *rain*. The Kewa and Ipili terms would seem to be periphrastic verb expressions, which favours the interpretation of tada as possibly deriving from the term for *rain*.) 64) *To speak*: W ãwa oko, K agaa la. (The Wiru expression is occasionally used with the meaning *to speak* (literally *to open the mouth and utter*). The first word ãwa is a nasalised root class verb ã-. Such a root followed by the common verb stem formative suffix -ka would yield the verb stem aga- ([aŋga-]). This stem plus the action enclitic -le would yield agale *speech* which is the uninflected word of the more common Wiru expression *to talk* agale oko (literally *speech he says*) which is formally closer to the Kewa expression agaa la.) 65) *To dance*: W kali mali toko, K matya ta, M ti mol le, H mali lia, E mari riŋgi.

2.4.3.8. NUMERALS AND OTHER TERMS

66) *Three*: W **tebolo**, K **repo**, M **tep** or **tepo**, S **tepo**, H **tebira**, E **tema**. (The proto-term underlying these forms is probably a compound word combining a term for *one* and *two* (a common mode of signifying *three*).) 67) *One*: W **odene** ([**ondene**]) in the non-body part count system, **ege** ([**eŋge**]) in the body part count system. (In a system which also counts (separately from the body part system) in sets of five by the digits of the hand and feet, and which in the body count system begins and ends with **ege** (*little finger* on the left and right hand respectively), it is not hard to see how **odene** can be reconciled with Ipili **ondene** *five* and **ege** reconciled with the possible Enga cognate **maeŋge** *five*.) 68) *Yesterday*: W **abela**, K **abala**, M **ombolo** or **ambelə**, S **ambanetu**. (The terminal segment of the Sau term may point to another type of relic form.) 69) *Yes*: W **ẽe**, K **ee**, M **ee**, I **ee**. 70) *Breast*: W **adu**, K **adu**, M **ond** or **ondu**, E **andu**. 71) *Flying fox* or *large bat*: W **kaima**, K **kaima**, M **yakeim** or **kem**, S **dukai**, H **kamia**.

2.4.3.9. CONCLUSION

Future comparative studies in the West Central Family, for which Franklin has laid the foundations, must be continued to establish the sound correspondence sets by which to establish a solid core of proto-words. Given this, it may be possible to prove by orthodox comparative methods that Wiru is genetically, but remotely, related to this group and in consequence to the East New Guinea Highlands Stock. Meantime the evidence cited and discussed above tends to justify the conclusion that Wiru has sufficient structural and lexical features in common with such languages to justify its inclusion with them as a typical Highland Papua New Guinea language.

NOTES

1. The following corrections should be made to chart 3 of this article: 3rd person dual should be **kita**, and 2nd and 3rd person dual and plural should be **kiwi**, although in many contexts the form **kini**, basically a free possessive personal pronoun, functions as a subject pronoun.

2. The following abbreviations are used for language names: W Wiru, K Kewa, M Mendi, N Nipa, S Sau, H Huli, I Ipili, E Enga.

3. Wiru and Kewa **b** represent a prenasalised stop **mb**. All voiced stops in Wiru are prenasalised.

4. The vowel of the possessive suffix **-nE** is **e** following a syllable with the vowel **a** or the vowels **e** and **i**. It is **o** following a syllable with the vowel **u** or **o**.

5. Where it is necessary to indicate a dialect, following Franklin, they will be indicated as follows: WK West Kewa, SK South Kewa etc.

6. The use of a term in address is indicated by (a) and in reference by (r).

7. The author undertook a detailed comparison of the two kinship systems during a post-graduate study programme with the East West Center, Hawaii.

8. The same sound correspondence is involved in the word for a bird of paradise species: W **baua**, K **bakua**.

9. The vowel sequence **aua**, **aue**, or **auo** in Wiru, both as the segmental phonemes comprising a morpheme, or as a submorphemic sequence within a word, is characterised by intensely constricted articulation between the

initial **a** and the following **u** with both velar and palatal involvement. A person hearing such a sequence for the first time might well record it with either a transition **k** or a transition **y** between the two vowels. There is also strong labialisation following the release of the initial **au** to the final vowel. The root form **aua** may underlie the terms for *mother, mother's brother*, and the grandparental and parent-in-law terms in Wiru.

10. In Wiru and Kewa these terms also specify affinal kin of the Go generation linked to ego, male or female, by two marriage bonds, as well as other affinal kin. The significance of this in the light of features in the deep structure of the grammatical system is touched on in the monograph on Wiru grammar currently being completed.

11. This type of formal relationship between personal pronouns with a shared semantic component in free personal pronoun systems of languages of the stock was first noted and described some time ago in an unpublished manuscript by H. Kerr 'Free Personal Pronoun Systems with Trichotomous Number Dimensions in Languages of Highland New Guinea' (Bibliography of the Summer Institute of Linguistics, New Guinea Branch, 1969).

12. The Enga word **timbu** or **timbuni** *big* evidently carries an optional terminal segment which may equate with the relic segment dealt with previously. The close correlation of size and number is confirmed by the Enga word **tumbi** *many* of the periphrastic expression **tumbi raoo** *to be many*, and pairs of formally similar words meaning *big* and *many* in Ipili and Mendi: Ipili **ada** *big*, **adapua** *many*; Mendi **ondo** or **ando** *big*, **ondup** or **ondopu** *many*. The Wiru word **aada** *old man* is probably correlated with the proto-West Central word ***aada** *big*. In Miriam of Torres Strait the root **au** means *large, great*. In combination with the male suffix **-le** it means *an old man*. Similarly in Indo-European languages a word basically denoting *big* associated with the term for *father* or *mother* indicates grandparents. In this case age representing the temporal system is correlated with the system of size and number. This correlation of the temporal system with the size-number system would explain why in Wiru and in Kunimaipa the words for *young, fresh, new* belong to the very small subset of forms which basically denote size and number.

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P A R T 2.5.-2.9.

THE TRANS-NEW GUINEA PHYLUM

2.5. THE TRANS-NEW GUINEA PHYLUM IN GENERAL

S.A. Wurm, C.L. Voorhoeve, K. McElhanon

2.5.1. INTRODUCTORY REMARKS

The Trans-New Guinea Phylum is both geographically and numerically by far the largest of the Papuan phylic groups: it extends over considerably more than four-fifths of the New Guinea mainland and comprises nearly five hundred languages, i.e. close to 70% of the over seven hundred and twenty Papuan languages identified to date. At the same time, speakers of Trans-New Guinea Phylum languages account for almost 82% of the approximately 2,756,000 speakers of known Papuan languages. (See the Table at the end of 1.3.4.).

Apart from the Austronesian coastal and near-coastal areas in the west, south-east, north-east and north, the only sections of the mainland which are not occupied by Trans-New Guinea Phylum languages are the northern five-sixths of the Vogelkop Peninsula, a small western portion of the northern part of the non-peninsular section of Irian Jaya which is occupied by the languages of the Geelvink Bay Phylum and a few isolates, and in Papua New Guinea the Sepik and Ramu basins and coastal ranges in the north of the Sepik Districts, two tiny areas in the Morobe and Gulf Districts which are held by two isolates, and two small areas in the Northern District occupied by the Maisin language, an Austronesian-Papuan "mixed" language whose exact classificatory status is still under discussion (see (II) 4.5.1.), but which may prove to be originally Austronesian.

In addition to this, the Papuan languages found on a part of the northern half of the island of Timor, and on most of the Alor and Pantar Islands, south-west of Irian Jaya, are now believed to be members of the Trans-New Guinea Phylum - until quite recently, they were regarded as belonging to the West Papuan Phylum (see 2.10.1.).

The history of the establishment of the Trans-New Guinea Phylum and the various steps leading to its discovery and elaboration have already been described in 1.3.3. and 1.3.4. and need not be repeated here.

Wurm, S.A., Voorhoeve, C.L. and McElhanon, K. "The Trans-New Guinea Phylum in General". In Wurm, S.A. editor, *New Guinea area languages and language study, Vol. 1, Papuan languages and the New Guinea linguistic scene.* **C-38:299-322**. Pacific Linguistics, The Australian National University, 1975. DOI:*10.15144/PL-C38.299*

2.5.2. GENERAL CHARACTERISTICS

The main characteristics of the Trans-New Guinea Phylum show a fair amount of homogeneity in their appearance in the languages belonging to it except that the influence of various substrata is in evidence in most parts of the phylum, with their influence being particularly strong in some, mostly marginal, areas where the languages contain a considerable number of non-Trans-New Guinea Phylum features and are quite aberrant in several ways. Such areas are, in particular, in a rather extended region in the central south, in the border area between the West Sepik District of Papua New Guinea and Irian Jaya, in the north and the extreme west of Irian Jaya, as well as in the Madang District. In the light of what has been said about the classification of Papuan languages in 2.2.0. and in particular, in 2.2.6., it has nevertheless been decided to include such fringe area language groups in the Trans-New Guinea Phylum, generally as sub-phyla, even though only a component part of each of them is likely to be genetically related to other Trans-New Guinea Phylum languages. Other language groups which are also located in one of the areas mentioned and show quite strong, but apparently less incisive, Trans-New Guinea Phylum influence, have been excluded (see 2.2.6.), with the decisions concerning the inclusion or exclusion of especially doubtful language groups being perhaps somewhat arbitrary in some cases.

From what has been said in 3.4.1. in this volume, it appears that much of the Trans-New Guinea Phylum area may have been originally occupied by a number of probably unrelated earlier languages, and that the interrelationship of many of the present-day Trans-New Guinea Phylum languages is in a way, secondary, or partial and fractional, in nature and brought about by the very strong and pervading influence of an originally little differentiated element manifested on both the lexical and structural-typological levels, and attributable to the spreading of daughter languages of the Trans-New Guinea Phylum proto-language first from west to east through much of the New Guinea mainland well over five thousand years ago, and perhaps much more vigorously, from east to west during the last five thousand years or so (see 3.4.1.). The presence of the older, different languages upon which the Trans-New Guinea Phylum languages appear to have been superimposed in the course of these migrations, is noticeable in the form of substrata of varying strength throughout the greater part of the Trans-New Guinea Phylum.

The most important main characteristics of Trans-New Guinea Phylum languages are as follows:

2.5.2.1. *PHONOLOGY*

Very commonly two series of stops are present, but fricatives are often restricted to one phoneme per language, and palatalised and labialised consonants are rare. A glottal stop phoneme appears with great statistical frequency in some restricted areas. In a number of languages, uncommon consonant types such as laterally released stops, labio-velar stops, preglottalised voiced and voiceless stops, implosive stops, and bilabial trills (the last probably non-phonemic), are met with. The consonants often have widely varying allophones, and fricative allophones of stops are very common. The number of vowel phonemes is commonly five, very rarely less, though instances of higher numbers occur. The vowels rarely have widely varying allophones. The suprasegmental systems are often complex, and phonemically relevant tones are frequently found. Morphophonemic changes are very numerous and often highly elaborate.

2.5.2.2. *PRONOUNS*

The personal pronouns in the Trans-New Guinea Phylum languages belong very predominantly to set I (see 2.3.3.2.) (in a few western, central and eastern areas, to set Ia) (see 2.3.3.5.), but set II (see 2.3.3.3.) is very strongly in evidence in the central south in sub-phylic areas, e.g. in the Trans-Fly area, as well as to a lower degree in the north and the extreme west. Set III (see 2.3.3.4.) is strongly present in the north-west and central north, and very strongly in the north-east in the Madang District in a sub-phylic area, and also in a region extending to the south of the western Madang District through the Highlands to the Papuan Gulf. The characteristic base consonants n and k of the set I pronouns of 1 sg. and 2 sg., in the general form of a dental nasal + vowel, and a velar stop + vowel, appear over wide areas in the subject and/or object markers with the verbs. A usually open vowel tends to indicate the third person singular in such cases.

2.5.2.3. *MORPHOLOGY*

The morphology of the Trans-New Guinea Phylum languages is predominantly suffixing, though prefixes play a part, often as object markers and aspectual markers with verbs, and as possessive markers with nouns. Especially in the south, the north-west and the extreme west, prefixes are more strongly in evidence in aberrant languages which often belong to sub-phyla. The morphology of the great majority of the Trans-New Guinea Phylum languages shows very high to extreme complexity, though some languages, especially in the central north, the eastern part of the southern centre and the south-east, have less elaborate morphologies. An

outstanding feature which is very wide-spread amongst Trans-New Guinea Phylum languages is the presence of a covert noun-class system denoted through sets of classificatory verbs of two different types. At the same time, an overt two-gender system manifesting itself in pronouns, adjectives and noun and verb markers which is characteristic of many languages of other Papuan phyla is found in Trans-New Guinea Phylum languages, but is limited to some, often sub-phylic, parts of the centre, the south, the southeastern part of the central portion, the north-west and the west. It manifests itself mostly only in third person singular personal pronouns and in bound person markers with verbs, and is often quite rudimentary. It is generally co-occurring with the class-system through classificatory verbs, and is apparently a sub-stratum feature wherever it is met with.

Another feature which is very widespread and common amongst Trans-New Guinea Phylum languages, though not entirely limited to them, is the presence of special sentence-medial verb forms, i.e. of separate sets of forms appearing with non-final verbs in a sentence, with identity and non-identity of the subjects of the medial and the final verbs mostly indicated by separate forms. Outside the Trans-New Guinea Phylum, sentence-medial verb forms are usually less elaborate than within this phylum, and their occurrence is limited.

Also, many Trans-New Guinea Phylum languages are characterised by one bound subject marker indicating two or several different persons, especially the second and third persons non-singular. Again, this feature is encountered outside the Trans-New Guinea Phylum area as well, but very much less commonly.

Other common or widespread characteristics of the Trans-New Guinea Phylum languages have been given in 2.3.2.5. and contrasted with Sepik-Ramu Phylum features.

Some additional discussion of the covert noun-class system through classificatory verbs, and of sentence-medial verb forms, may be given for illustration.

2.5.2.3.1. Classificatory Verbs

Two types of classificatory verbs can be distinguished which A. Lang (1971, 1975) refers to as **existential verbs**, and as **pro-verbs** in predications.

The **existential verbs** occur with certain types of concrete nouns and correspond in meaning to the English copula *be*. Every one of such nouns co-occurs with one particular existential verb which marks the class to which the particular noun belongs, and each of these verbs appears only with a certain set of nouns which generally denote palpable objects. In

Enga (East New Guinea Highlands Stock), A. Lang observed seven distinct existential verbs and in consequence, seven covert noun classes, i.e. noun classes not indicated on the noun itself by morphological processes, and eight have been observed in Hagen (East New Guinea Highlands Stock). The assignment of nouns to the different classes as manifested by their co-occurrence with certain existential verbs is generally attributable to features of shape and posture, except that in languages of the Central Family of the East New Guinea Highlands Stock, the classes appear to be determined by features of animate versus inanimate, and permanent versus non-permanent. This aberrant feature of the languages of this family is of interest in the light of other aberrant characteristics of the languages included in it with regard to their pronouns (touched upon in 2.3.3.4.1.), and also of other features, and of findings of linguistic prehistory (3.4.1.).

In other languages, the number of existential verbs appears to be mostly less, but this may be attributable to the inadequacy of the amount of study devoted to this particular phenomenon to date. So for instance, only six seem to be present in Kamoro (Central and South New Guinea Stock); five in Asmat (Central and South New Guinea Stock) and Dani (Dani Stock); whereas in Wahgi (East New Guinea Highlands Stock), Kâte (Huon Peninsula Stock), Kiwai (Trans-Fly Stock) and others there are four; and Huli (East New Guinea Highlands Stock) has three. For instance, in Kiwai (of the Trans-Fly Stock) (Southern Kiwai language, Island Kiwai dialect, Wurm 1973), the four verbs erea = *remain, lie*, (orow)omi = *stay*, orou = *lie*, and otoi = *stand* function as existential verbs, the first in connection with some objects which do not move, the second with persons, the third with persons or things lying down, and the fourth with, for instance, mountains, trees, and food plants and their fruit (Ray 1931). Examples: ni o'i-ro uba-ime ai-r-erea = *this coconut is bad = this* (*coconut*-subject) (*bad*-emphasis) ([assertion] - [non-speaker subject in present form] - [*be*]); gonou-wa na'u dubu ai-g-omi-diro = *a man was there = (that*-locative) *one man* ([assertion] -[non-speaker subject in past form] - [*be*] - [continuity]); auwo-ia mataru aime-g-orou = *and then there was a great calm =* (*big*-emphasis) *calm* ([successive action] - [non-speaker subject in past form] - [*be*]); no ebeta ota r-otoi = *what tree is this? = this what tree* ([non-speaker subject in present form] - [*be*]). A few examples from Enga (East New Guinea Highlands Stock) (A. Lang 1971, 1975) will further illustrate the point: mená dúpa kate-yé = *pigs exist = pig the* ([*be*] - [habitual]); énda dúpa pete-ŋé = *women exist = woman the* ([*be*] - [habitual]); kanopáto dúpa sí-ŋi = *reptiles exist = reptile the* ([*be*] - [habitual]); mapú dúpa pale-ŋé = *sweet potatoes exist = (sweet potato) the* ([*be*] - [habitual]); etc.

The pro-verbs which enter into the formation of predications constitute the second type of classificatory verbs (A. Lang 1971, 1975). The predications consist of an adjunct, usually a noun, which has a specific meaning and a pro-verb whose meaning is more general, with the combination adjunct + pro-verb functioning as a verb-phrase. These pro-verbs appear in complementary distribution with the existential verbs with regard to the types of the nouns with which they co-occur - the nouns which pro-verbs accompany can be described as generally indicating inner states, events, qualities and time.

The number of these pro-verbs in a given Trans-New Guinea Phylum language is usually greater than that of the existential verbs, and they subdivide the adjunct nouns co-occurring with them into a corresponding number of noun classes. A. Lang (1971, 1975) distinguishes thirteen such pro-verbs in Enga (East New Guinea Highlands Stock), and in some other East New Guinea Highlands Stock languages the following numbers have been observed: Chimbu proper (Kuman) twelve, Sinasina ten, Wahgi and Kalam eight, Hagen seven, Kewa five, Benabena three, and Usarufa two. Here again, further study may well reveal additional pro-verbs. In Kapau (Angan stock-level Family), six seem to be present, in Kâte (Huon Peninsula Stock), Asmat (Central and South New Guinea Stock) and Suena (Binandere Stock) also six, and in Telefol (Central and South New Guinea Stock) three.

A few examples will suffice to illustrate this phenomenon:

The most frequently encountered pro-verbs in predications in Trans-New Guinea Phylum languages carry the basic meaning *do*, *hit*, and *utter*, but pro-verbs with the meanings of *eat*, *get*, *take*, *see*, *go*, *know*, *come*, *put*, *die*, *give*, and others are also encountered. For instance, in Chimbu proper (East New Guinea Highlands Stock) (Trefry 1969), di- = *utter* appears in predications such as birum di- = *sweep*, ebe di- = *lose*, puglo di- = *jump*; eri = *do* for instance in kai eri- = *cry*, kuda eri- = *be angry*; gogl- = *die* in kidan gogl- = *be hungry*, kodugl gogl- = *be afraid*; etc. In Benabena (East New Guinea Highlands Stock) (Young 1964, 1971), i- = *do* is found for instance in kehe i- = *call*, iya i- = *spear*; ho- = *hit* in loka ho- = *ask*, kota ho- = *fall down*, igofa ho- = *break something*; li- = *take* in foya li- = *work*, kele li- = *wipe*; etc. In Suena (Binandere Stock) (Wilson 1969), wai = *do* is for instance met with in gitawa wai = *sleep*; sai = *utter* in asio sai = *sneeze*; nai = *arrive* in are nai = *yell*; etc.

2.5.2.3.2. Sentence-Medial Verb Forms

The sentence-medial verb forms have been briefly touched upon in 2.5.2.3. as one of the salient characteristics of the majority of the Trans-New Guinea Phylum languages, though, possibly under Trans-New Guinea

Phylum influence, they show a limited occurrence outside this phylum. As has been indicated, sentence-medial verb forms constitute special sets of forms appearing with non-final, as opposed to final, verbs, and they denote the relationship between the actions referred to by the medial and final verbs such as simultaneity, successivity, duration of one of the actions and punctiliarity of the other, temporal relations, conditional and causal relations, and others. In addition, as has already been mentioned, identity versus non-identity of the subjects of the medial and final verbs is usually indicated by separate sets of forms, and in very many languages, the medial verb forms denote the person and number of the subject of the medial verb, or in an anticipatory manner, of the subject of the final verb, or of both. In individual sentences, the number of medial verbs is unrestricted and can be very great with dozens of them following each other in narrative style for instance, before a final verb appears.

In individual Trans-New Guinea Phylum languages, the medial verbs can be of great complexity and their system very elaborate. However, their intricacies generally show a sharp decrease towards fringe areas of the Trans-New Guinea Phylum, and in quite a few areas in which strong substrata affecting grammatical structures are found, especially in subphylic parts of the phylum, the sentence-medial verbs are only weakly developed, or totally absent. This seems to provide added emphasis to the assumption that the appearance of sentence-medial verb forms constitutes one of the basic characteristics of Trans-New Guinea Phylum languages and is presumably one of the features of the Trans-New Guinea Phylum protolanguage. Characteristically, some languages of other phyla which possess sentence-medial verb forms, such as languages of the Middle Sepik Super-Stock of the Sepik-Ramu Phylum, appear to have been in contact with Trans-New Guinea Phylum languages, and with a section of it which shows a strong development of this feature (see 3.4.1.).

A few examples of sentence-medial verb forms may be given here for illustration: Kamano (East New Guinea Highlands Stock) (Payne and Drew 1966): ne?ya ne-te-?na vu-gah-u-e = *when I have eaten food I will go = food* ([*eat*] - [successivity marker] - [first person singular subject marker on medial verbs])([*go*] - [future] - [first person singular subject marker on final verbs] - [declarative]), u-nə-mi-te-su-i-ge-nka vu-gah-an-e = *when he has given me, you* (sg.) *will go* = ([*there*] - [first person singular object] - [*give*] - [successivity marker] - [intention] - [third person singular subject marker] - [change of subject marker] - [anticipatory second person singular subject marker on medial verbs]) ([*go*] - [future] - [second person singular subject marker on final verbs] - [declarative]); Awa (East New Guinea Highlands Stock) (Loving and McKaughan 1973): tag-og-ɒh bok-ɔ́na? = *when I looked, you* (sg.) *went* = ([*look*] -

[first person singular subject marker in near past tense form and in a form preceding anticipatory subject markers in medial verbs] - [anticipatory second person singular subject marker on medial verbs]) ([*go*] - [second person singular subject marker on final verbs in near past tense form]). If there is no change of subjects, some sentence-medial verb forms in Awa carry a special portmanteau suffix to denote singularity, duality or plurality of the subject, e.g. tag-ani-e = *you* (sg.) *will see and you* (sg.)... = ([*see*] - [singularity of subject, with the appearance of this suffix indicating future and identity of the two subjects] - [anticipatory second singular subject marker on medial verbs in a special form appearing after number-marking portmanteau suffixes]); Kâte (Huon Peninsula Stock)(Pilhofer 1933): guŋ fo-huˀ mi mana-po = *I was sleeping and did not hear (it) = sleep* ([*lie*] - [subject identity marker denoting simultaneity]) negation ([*hear*] - [first person singular subject marker on final verbs in far past tense form]), fiuˀ lo-ha-me hone-pe wise-weˀ = *while he was stealing, I saw him, and he fled = theft* ([*take*] - [simultaneity marker] - [third person singular subject marker denoting change of subject]) ([*see*] - [first person singular marker indicating successivity and change of subject]) ([*run*] - [third person singular subject marker on final verb in far past form]).

2.5.2.4. *VOCABULARY*

A number of lexical items have cognate chains running through most, or almost all, of the entire Trans-New Guinea Phylum, and quite a few more are represented by less far-flung, but nevertheless spectacular, cognate chains and constitute valuable diagnostic items. Many vocabulary items appear in the form of two or several distinct cognate chains whose members are often in complementary distribution within languages belonging to the same family within individual stocks. In cases in which several cognate chains are present, one of them sometimes constitutes an Austronesian loan element. This occurrence of multiple parallel cognate chains in Trans-New Guinea Phylum languages constitutes interesting evidence for further comparative work and studies in linguistic prehistory in apparently reflecting the spreading of several different language elements over wide areas of the New Guinea mainland in the past.

Lexical items appearing in the form of very widespread cognate chains throughout most of the Trans-New Guinea Phylum are for instance the words listed in 2.2.4.1. A)b)-c), i.e. the verbs *eat* and *say, speak*; the nouns *arm (or hand), bone, breast (female), ear, eye, fire, louse,* to a lesser extent *mother, skin,* and *water*; as well as set I pronouns (see 2.3.3.2.) of the first and second person singular, the first person plural, and to a lesser extent, the third person singular. Other very widespread lexical

items are for instance the verbs *sleep, burn,* and *shoot*; the nouns *foot, leg, knee, nail, neck, spittle, urine, elder sister, wing, ashes, road, fire, sand, smoke, wind*; the adjectives *full, new, warm*; and the set I pronoun (see 2.3.3.2.) of the second person plural. Lexical items manifesting themselves in the form of several cognate chains, with one of them an Austronesian loanword in the majority of the cases, are for instance, *hair, head, mouth, nose, tongue, tooth, elder brother, rain, dog, leaf, star, long*, etc. (McElhanon and Voorhoeve 1970).

The semantic characteristics of the grouping of lexical items (see 2.2.1.) are of some diagnostic importance in comparative work involving Trans-New Guinea Phylum languages though less so than in other phyla such as the Sepik-Ramu Phylum because of the greater formal comparability of Trans-New Guinea Phylum lexical items as resulting from the greater number of diagnostic cognate chains in it. For instance, in contrast to the Sepik-Ramu Phylum situation, the concepts of *blood* and *red* are generally connected with two distinct lexical items in Trans-New Guinea Phylum languages.

A certain amount of comparative linguistic work resulting in the reconstruction of proto-forms has been undertaken involving various families within some of the stocks composing the Trans-New Guinea Phylum (see e.g. 2.4.2. and 2.4.3.). Similar, though rather preliminary, studies concerned with the Trans-New Guinea Phylum as a whole have also been carried out. A discussion of this has been given in 2.4.1.

2.5.3. INTERNAL CLASSIFICATION

2.5.3.1. *INTRODUCTORY REMARKS*

From the point of view of its internal classification, the Trans-New Guinea Phylum consists of a very major main section which can be subdivided into a geographically very large central and western, and a comparatively quite small eastern, part, with a number of additional, mostly smallish, fringe sections containing very many, largely numerically insignificant, aberrant languages and adjoining the large central and western part of the main section in the south, south-west, west, north-west and north-east.

As has been pointed out in 2.2.5., it has been decided in the light of the extent and nature of the differences and similarities between member languages of the various stocks making up the abovementioned general picture which largely reflects the greater or lesser presence and influence of sub-strata (see 2.3.2.3.), to introduce the concepts of **sub-phyla** and **super-stocks** to permit greater taxonomic flexibility (for the definition of these two terms see 2.2.5.). However, in spite of the greater

classificatory range provided by these concepts, the clear demarcation of the status of several Trans-New Guinea Phylum stocks still remains difficult, and somewhat arbitrary decisions are necessary in a few instances (see below 2.5.3.2.).

2.5.3.2. *DOUBTFUL CASES*

2.5.3.2.1. General Remarks

The general principles underlying the establishment of stocks and phyla (see 2.2.5. and 2.2.4.3.) allow for the assignment of a specific classificatory status to the great majority of the languages of the Trans-New Guinea Phylum. However, in addition to the cases discussed in 2.2.6. about whose inclusion or otherwise into the Trans-New Guinea Phylum as such there may be some doubt, there are a few language groups whose inclusion into the Trans-New Guinea Phylum appears justified in the light of the definitions given in 2.2.4., but whose status as members of sub-phyla, super-stocks or otherwise may be questionable. Two particular instances may be mentioned here:

2.5.3.2.2. The Marind Stock

The Marind Stock which is located in south-eastern Irian Jaya shows a number of aberrant features which are probably attributable to a strong sub-stratum, with several of these aberrant features being comparable to those characteristic of languages of the Trans-Fly Stock (see 2.6.1.) which has been assigned sub-phylum status in the light of these characteristics. In view of this, there seem to be some grounds for regarding the Marind Stock as constituting a sub-phylum as well. However, in contrast to the Trans-Fly Stock languages whose pronoun forms belong largely to set II (see 2.3.3.3.), the pronouns in the Marind Stock languages belong predominantly to set I, the typical Trans-New Guinea Phylum set (see 2.3.2.5.). Also, the lexical sharing between Marind Stock languages and other Trans-New Guinea Phylum languages is of a much higher order than that between most Trans-Fly Stock languages and other languages of the Trans-New Guinea Phylum. On the structural level, the Marind Stock languages share more features with other Trans-New Guinea Phylum languages than is the case with Trans-Fly Stock languages, with a higher degree of formal similarity of person markers with verbs constituting one of these features.

When taking all these factors into consideration, it may, on balance, seem possible to include the Marind Stock into the main section of the Trans-New Guinea Phylum while recognising its aberrant status within it.

2.5.3.2.3. The Sentani Family

The Sentani language of the Sentani Family located in north-eastern Irian Jaya and according to the present classification, constituting the major portion of the Sentani Stock, has been shown by Voorhoeve (1969) to have some comparatively close links with the Asmat language of the Kamoro-Sempan-Asmat Family of the Central and South New Guinea Stock. On these grounds, it could perhaps be suggested that it and the other languages of the family to which it belongs, could be included, as a constituent family, into the Central and South New Guinea Stock (Voorhoeve 1969). At the same time, however, it contains some aberrant features such as membership of its pronouns to sets II and III (see 2.3.3.3. and 2.3.3.4.), and much of its vocabulary is aberrant when compared with the Central and South New Guinea Stock vocabulary, and also shows not many close links with that of the neighbouring stocks and families which are largely subphylic members of the Trans-New Guinea Phylum. The same statement applies to some of its structure which shows a mixture of typical Trans-New Guinea Phylum characteristics such as the absence of an overt two-gender system, and other features which bear no close resemblance to those of the neighbouring groups mentioned above. It appears that the languages of the Sentani Family contain a sub-stratum upon which a Trans-New Guinea Phylum element similar to, or identical with, that present in particular in the Kamoro-Sempan-Asmat Family of the Central and South New Guinea Stock (disregarding the sub-stratum features present in that family) has been superimposed. The strength of this sub-stratum, especially on the lexical level, is such that it seems to militate against the inclusion of the Sentani Family into the Central and South New Guinea Stock. The question remains therefore whether or not there may be sufficient grounds for joining it and the whole stock to which it belongs, with that stock into a super-stock. While this may well be justifiable on the basis of the obvious connections between Asmat and the Sentani Family languages on some levels, it seems that, perhaps somewhat arbitrarily, the assignment of ordinary stock status to the Sentani Stock may perhaps be more appropriate if the overall similarities and differences between it and the Central and South New Guinea Stock are taken into account.

2.5.3.3. *THE CLASSIFICATION*

2.5.3.3.1. General Remarks

One difficulty encountered in describing the composition of the Trans-New Guinea Phylum in terms of its constituent stocks is the question of the order in which the stocks should be listed. The principle of dealing with the main section of the phylum first, beginning with its large

western and central part and following it up with the small eastern one, and then turning to the sub-phyla, obviously suggests itself. However, the order within these portions remains largely arbitrary, and it has been decided to start the listing with the main section at the general Finisterre-Huon Peninsula area, an important region from the point of view of the assumed second major Trans-New Guinea Phylum language migration (see 3.4.1.), and to proceed from there in a generally western direction, allowing for some deviations to the south and north to include geographically outlying stocks.

The Angan Stock which, when following the described principle of listing, should have been mentioned in the second place after the Finisterre-Huon Super-Stock in view of its geographical position, has been mentioned a little later out of turn. It is somewhat aberrant, and appears to owe its, possibly secondary, Trans-New Guinea Phylum nature and characteristics to the strong super-imposition upon an older, probably unrelated, language type, of a language element similar to, or identical with, one encountered particularly strongly in the eastern central part of the East New Guinea Highlands Stock. The discussion of the Angan Stock seems therefore to be somewhat subsidiary to that of the East New Guinea Highlands Stock which ought to come first. At the same time, its listing immediately after the East New Guinea Highlands Stock would break the sequence between the East New Guinea Highlands, Kutubuan and Central and South New Guinea Stocks which are closely linked by chain relationships between languages belonging to them. In view of this, it has been thought best to mention the Angan Stock after the Central and South New Guinea Stock.

The eastern part of the Trans-New Guinea Phylum has been taken up with the Binandere Family which is again close to the Huon Peninsula area and occupies a somewhat transitory position between the two parts. The eastern part has been presented in a generally eastern direction. The sub-phyla have again been started with in the general Huon Peninsula area from where they have been enumerated in a generally clockwise direction as far as northern Irian Jaya, with the far western sub-phyla added afterwards.

2.5.3.3.2. Composition of the Trans-New Guinea Phylum

Note: s-l = stock-level; f-l = family-level; Is = isolate; dfl = doubtful.

A number added in parentheses to a figure in the family column, with (dfl)f-l Is etc. after it, indicates that the families composing a given stock include as many (doubtful) family-level isolates as are denoted by the number in question, i.e. 4 (2 dfl f-l Is) = 'the stock contains four families of which two are doubtful family-level isolates'. The symbols s-l Is have comparable meanings, e.g. 1 (Is-l Is) = 'the stock contains

one stock-level isolate' = 'the stock consists of a single stock-level isolate' = 'the language listed constitutes a stock-level isolate'.

As has already been pointed out in note 1 to 1.0., the figures given in tables such as the following (figures which are the result of the adding up of the numbers of speakers of individual Papuan languages as given in the various chapters in this volume, and, in some instances, of rough estimates) may in fact be too low because they are based on population counts made several years ago. In recent years, there have been quite extensive population increases in many parts of the New Guinea area, and as a result of this, the present number of the speakers of Trans-New Guinea Phylum languages can be assumed to be markedly larger than indicated, perhaps by as much as 3%-5% in general, and rather more in some areas. Information on numbers of speakers is subject to quite frequent changes as new data become available or extant ones are found to be in error - events of almost daily occurrence in Papuan linguistics.

It may be mentioned that in the table below, the figures culled from the various chapters have been rounded up to full hundreds.

NAME	STOCKS	FAMILIES	LANGUAGES	SPEAKERS
TRANS-NEW GUINEA PHYLUM	54	134(45f-l & s-l Is)	493	2,247,620
I. Main Section	24	58(14f-l & s-l Is)	258	1,806,700
A. Central and Western Part	16	49(13f-l & s-l Is)	208	1,672,200
1. Finisterre-Huon Super-Stock	2	10(2f-l Is)	71	139,000
a) Finisterre Stock	1	8(1f-l + 1df1 f-l Is)	50	55,100
b) Huon Stock	1	2	21	83,900
2. East New Guinea Highlands Stock	1	7(2f-l Is)	38	929,200
3. Central and South New Guinea-Kutubuan Super-Stock	2	11(1f-l Is)	48	162,000
a) Kutubuan Stock	1	2	5	4,000
b) Central and South New Guinea Stock	1	9(1f-l Is)	43(+?)	158,000
4. Angan stock-level Family	1	1	12	64,500
5. Gogodala-Suki Stock	1	2(1f-l Is)	3	11,500
6. Marind Stock	1	3	6	21,000
7. Kayagar stock-level Family	1	1	3	7,200
8. Sentani Stock	1	2	4	10,500
9. Dani (or Dani-Kwerba) Stock	1	4(2f-l Is)	11	225,000
10. Dem stock-level Isolate	1	1(s-l Is)	1	500
11. Wissel Lakes-Kemandoga Stock	1	2(1f-l Is)	4	92,000
12. Mairasi-Tanah Merah Stock	1	2(1f-l Is)	3	3,500
13. West Bomberai Stock	1	2(1f-l Is)	3	6,200
14. Mor stock-level Isolate	1	1(s-l Is)	1	60
B. Eastern Part	8	9(1f-l Is)	50	134,500
1. Binandere Stock	1	2(1f-l Is)	15	61,500
2. Goilalan stock-level Family	1	1	5	31,600
3. Koiarian stock-level Family	1	1	6	15,300

NAME	STOCKS	FAMILIES	LANGUAGES	SPEAKERS
4. Kwalean stock-level Family	1	1	3	1,200
5. Manubaran stock-level Family	1	1	2	3,000
6. Yareban Stock	1	1	5	2,600
7. Mailuan stock-level Family	1	1	6	7,100
8. Dagan stock-level Family	1	1	8	12,200
II. Sub-Phyla	30	76(31f-l & s-l Is)	235	440,920
A. Madang and Adelbert Range Sub-Phylum	8	31(10f-l & s-l Is)	100	76,000
1. Rai Coast-Mabuso (Madang) Super-Stock	2	10(1f-l Is)	57	36,100
a) Rai Coast Stock	1	4(1f-l Is)	29	14,600
b) Mabuso Stock	1	6	28	21,500
2. Adelbert Range Super-Stock	6	21(9f-l & s-l Is)	43	39,900
2^{1} Pihom-Isumrud-Mugil Section	3	10(3 f-l & s-l Is)	27	29,400
a) Pihom Stock	1	6(1f-l Is)	21	15,300
b) Isumrud Stock	1	3(1f-l Is)	5	11,800
c) Mugil stock-level Isolate	1	1(s-l Is)	1	2,300
2^{11} Josephstaal-Wanang Section	2	7(2f-l Is)	12	9,400
a) Josephstaal Stock	1	4(1f-l Is)	7	6,400
b) Wanang Stock	1	3(1f-l Is)	5	3,000
2^{111} Brahman Section	1	4f-l Is	4	1,100
a) Brahman Stock	1	4f-l Is	4	1,100
B. Teberan-Pawaian sub-phylum-level Super-Stock	2	2(1s-l Is)	3	10,300
1. Teberan stock-level Family	1	1	2	8,000
2. Pawaian stock-level Family (or Isolate)	1	1(s-l Is)	1	2,300
C. Turama-Kikorian Sub-Phylum	1	2(1f-l Is)	4	2,100
D. Inland Gulf Sub-Phylum	1	2(1f-l Is)	4	800

NAME	STOCKS	FAMILIES	LANGUAGES	SPEAKERS
E. Eleman Sub-Phylum	1	3(2f-1 Is)	7	41,700
F. Trans-Fly-Bulaka River (or Yelmek-Maklew) sub-phylum-level Super-Stock	2	6	29	35,500
1. Trans-Fly Stock	1	5	27	35,000
2. Bulaka River (or Yelmek-Maklew) stock-level Family	1	1	2	500
G. Goliath sub-phylum-level Family	1	1	6	50,000
H. Oksapmin sub-phylum-level Isolate (may prove to be unrelated to the Trans-New Guinea Phylum)	1	1(s-1 Is)	1	5,000
I. Senagi sub-phylum-level Family	1	1	2	4,300
J. Pauwasi Sub-Phylum	1	2	4	1,500
K. Northern (or Border-Tor-Lake Plain) sub-phylum-level Super-Stock	2	9(3f-1 Is)	31	17,200
1. Border Stock	1	3	12	12,700
2. Tor-Lake Plain Stock	1	6(3f-1 Is)	19	4,500
L. Morwap sub-phylum-level Isolate	1	1(s-1 Is)	1	400
M. Molof sub-phylum-level Isolate	1	1(s-1 Is)	1	200
N. Usku sub-phylum-level Isolate	1	1(s-1 Is)	1	20
O. Tofamna sub-phylum-level Isolate	1	1(s-1 Is)	1	100?
P. Nimboran sub-phylum-level Family	1	1	5	6,000
Q. Kaure Sub-Phylum	1	3(2f-1 Is)	4	2,500
R. South Bird's Head (or Vogelkop) Sub-Phylum	1	3	10	9,000
S. Kolopom (or Frederik Hendrik Island) sub-phylum-level Family (shows strong sub-stratum connections with R.)	1	1	3	3,300
T. Timor-Alor-Pantar Sub-Phylum	1	7(6f-1 Is)	18	175,000

Information on the stocks listed above under C, D, G, I, J, K2, L, M, N, O, Q and R is largely limited to lexical data and a few more or less scanty notes on structure, and their classification remains more or less tentative in most cases until more material becomes available. They have for this reason not been included into the main section of the Trans-New Guinea Phylum, but assigned sub-phylic status for the time being. It seems quite possible that some, or perhaps even quite a few, of them will prove to be ordinary stock-level members of the Trans-New Guinea Phylum.

2.5.4. NON-GENERAL CHARACTERISTICS

2.5.4.1. *CENTRAL AND WESTERN, AND EASTERN PARTS OF THE MAIN SECTION OF THE TRANS-NEW GUINEA PHYLUM*

As has been indicated in 2.5.3.1., the Trans-New Guinea Phylum contains a very large main section which is sub-dividable into two parts of quite unequal size on the basis of lexical, typological, and structural evidence.

As has been shown by comparative work and the study of cognate chains, the lexical cohesion between member stocks of the two parts is of approximately the same order within the two parts, but of a somewhat lower order between the two parts, except for the Binandere Stock which seems to constitute a link between the two parts both in this respect and in structure and typology.

With regard to structural and typological features, the salient characteristics of both parts are those listed in 2.3.2.5. and 2.5.2.1.-2.5.2.3. as typical of Trans-New Guinea Phylum languages, with other, aberrant, features playing only a relatively minor to very minor role in the great majority of the language groups (but see below 2.5.4.2.1.). Some significant structural differences between the two parts can however be observed, and a few may be mentioned here:

In languages of both parts, consonants tend to have phonetically widely varying allophones and in particular, stops often have fricative allophones. However, both these phenomena are in general, less strongly in evidence in languages of the small eastern part than in languages of the large central and western part. In addition, a few languages of the eastern part have some stop allophones of fricatives.

Complex suprasegmental systems including phonologically relevant tones, are features of many of the languages constituting the central and western part. In those of the eastern part, they tend to play a rather less important role, though languages with tonal systems are also present in that part.

In the languages of the central and western part, the pronouns belong overwhelmingly to set I (2.3.3.2.), except for a concentration of set III forms running through the highlands areas due south of the Madang District (see 2.3.3.4.1.) and the presence of some set II forms in highlands areas (see 2.3.3.3.1.). In languages of the eastern part, set I forms also predominate, but set II and set III forms are perhaps a little more strongly in evidence than in the central and western part.

The indication of the object through affixes added to the verb is widespread in both parts. However, while in the central and western part, markers constituting reflexes of *na, *ka and *a (predominantly as prefixes) (see 2.4.1.3.) appear widely for the first, second and third persons singular, markers found for these persons in languages of the eastern part are usually formally different, and object suffixes predominate.

A feature found in languages of both parts is the indication of two or several different persons by one bound subject marker in the verb complex. However, while in the central and western part, this feature is largely observable in connection with the second and third persons non-singular, it tends to affect other persons in languages of the eastern part.

Sentence medial verb forms (see 2.5.2.3.2.) are a salient feature of languages of both parts. However, their elaboration in languages of the eastern part is, except for the languages of the Binandere Stock, largely of a lower order than is predominantly the rule in the majority of those of the central and western part, and the lack of distinction between identity and non-identity of the subjects through special forms is somewhat more commonly found in languages of the eastern part than in those of the central and western part.

The presence of classificatory verbs (see 2.5.2.3.1.) is a feature of languages of both parts, but their development and role is of a much lower order in those of the eastern part than in those of the central and western part.

Another interesting difference between the two parts is the paucity of the presence, or the total absence, of Austronesian loanwords in a sometimes Eastern Oceanic form, from languages of the eastern part, whereas they are in evidence over a wide area of the central and western part (see below 2.5.4.2.2.). This phenomenon obviously reflects migrational trends within the Trans-New Guinea Phylum area in times post-dating the advent of Austronesians in the New Guinea area (see 3.4.1.).

2.5.4.2. *SUBSTRATA AND AUSTRONESIAN LOANWORDS IN TRANS-NEW GUINEA PHYLUM LANGUAGES*

2.5.4.2.1. Substrata

The existence of numerous substrata in the various Papuan language groups has been mentioned in many places in this volume, and a discussion of the problem itself given in 2.3.2.3., and three examples, one for the Trans-New Guinea Phylum and two for the Sepik-Ramu Phylum, have been mentioned there.

Two major substrata affecting the Trans-New Guinea Phylum have been discussed in chapter 3.4.1. in this volume, one of them very widespread and reflecting a West Papuan Phylum and to some extent also East Papuan Phylum type. A third substratum shared mainly by the languages of the Kolopom and South Bird's Head (or Vogelkop) Stocks is also referred to there, and a local East Papuan Phylum substratum in Trans-New Guinea Phylum languages in the eastern tail-end of the mainland is mentioned in 3.2.5.

A number of additional substrata in Trans-New Guinea Phylum languages may be briefly mentioned here:

The languages of the Madang and Adelbert Range Sub-Phylum show a great predominance of set III pronouns (see 2.3.3.4.) which are thought to have come into their area from the far west of the New Guinea mainland along the coast (see 3.4.1.). The same pronoun forms appear as a substratum in the Kalam Family languages of the East New Guinea Highlands Stock (see 2.7.2.2.5.6. in this volume) - the same languages have, in addition, a strong substratum from the Sepik-Ramu languages in the form of a pure Sepik-Ramu type phonology in them. Some of the same pronoun forms appear as substratum features in the Central and Eastern Families of that stock (see 2.7.2.2.6.) and are also present further south in the Teberan-Pawaian sub-phylum-level Super-Stock (see 2.7.5.2.4.1. and 2.7.5.3.).

The membership of the pronouns of the Sentani Stock languages in north-eastern Irian Jaya (see 2.6.2.2.1.4.) to sets II and III constitutes a substratum which manifests itself also in some other aberrant features of those languages.

The comparatively simple morphology of the languages of the Border Stock in the Northern (or Border-Tor-Lake Plain) sub-phylum-level Super-Stock (see 2.6.2.2.11.) appears to be due to substratum influence from the languages of the Kwomtari Phylum (see 2.14.1.2.), and perhaps also from the older forms of the Sepik-Ramu Phylum languages which are believed to have been comparatively simple in nature (see 2.11.0. and 3.4.1.).

The presence of set x pronoun forms (see 2.3.3.6.) in Trans-New Guinea Phylum languages is very much less pronounced than their appearance in

Sepik-Ramu and Torricelli Phylum languages, but it seems to be attributable to the same substratum in the three phyla.

The Timor-Alor-Pantar area languages which used to be classified as members of the West Papuan Phylum (Wurm 1971) are now believed to be more correctly classified as members of the Trans-New Guinea Phylum (see above 2.5.3.3.2.). Whichever way they are classified, they contain strong substratum elements of the other of the two phyla involved.

Trans-New Guinea Phylum lexical, typological and structural elements appear as substratum features in a number of non-Trans-New Guinea Phylum languages in the New Guinea area, i.e. in languages of the Sepik-Ramu, Sko, Kwomtari, West Papuan and East Papuan Phyla. They are particularly strongly in evidence in languages of the Middle Sepik Stock of the Sepik-Ramu Phylum, and in those of the East Bougainville Stock of the East Papuan Phylum.

2.5.4.2.2. Austronesian Loanwords in Trans-New Guinea Phylum Languages

The presence of Austronesian loanwords, some of them recognizably of Eastern Oceanic type, in many languages of the Trans-New Guinea Phylum, and the pattern of their distribution, has been briefly mentioned in 3.2.2.-3. in this volume.

Austronesian words of this kind are:

pig reflexes of pO *mpoRo ± m

dog reflexes of pPN *kulii (usually *l > r), and pAN *ʔat'u (?pO *ŋkaun)

tooth reflexes of pAN *gigi

breast reflexes of pO *susu, pAN *t'ut'u

hair reflexes of pO *ndau(n) and pAN *daun = *leaf*, and of pO *pulu, pAN *bulu²

rain reflexes of pAN *ʔut'an

leaf reflexes of pO *ndau(n), pAN *daun

moon reflexes of pO *pula(n), pAN *bulan

star reflexes of pO *pituqu, pAN *bintaŋ or *bituhən

mouth reflexes of pO *maŋa ± t

water reflexes of pAN *vajəɣ

A few examples from languages spoken at present at various distances from Austronesian-speaking areas:

pig Gadsup (East New Guinea Highlands Stock, Eastern Highlands, Papua New Guinea): po; Kamano (East New Guinea Highlands Stock, Eastern Highlands, Papua New Guinea): fu²; Moni (Wissel Lakes-Kemandoga Stock, Western highlands of Irian Jaya): woro; Uhunduni (or Amung) (Wissel Lakes-Kemandoga Stock, same area): bowe; Kiwai (Trans-Fly

Stock, Fly Delta, Western District, Papua New Guinea): boromo; Sentani (Sentani Stock, north-eastern Irian Jaya): bo; Afoa (Goilala stock-level Family, central mountain range, east of Anga stock-level Family area): polu.

dog Kamano (East New Guinea Highlands Stock, Eastern Highlands, Papua New Guinea): kəra; Waina (Border Stock, West Sepik District, Papua New Guinea): ure; Tonda (Trans-Fly Stock, western Trans-Fly area, Western District, Papua New Guinea): ŋaðɔ; Kamoro (Central and South New Guinea Stock, south-eastern Irian Jaya): uuri.

tooth Enga (East New Guinea Highlands Stock, Enga District, Papua New Guinea): nege; Telefol (Central and South New Guinea Stock, south-western corner of West Sepik District): ŋiŋ; Kewieng (Finisterre Stock, Western Morobe District, Papua New Guinea): gɛn; Ekagi (or Kapauku) (Wissel Lakes-Kemandoga Stock, western highlands of Irian Jaya): ego.

breast Dəra (Senagi sub-phylum-level Family, western West Sepik District and overlapping into Irian Jaya): toto; Kalam (East New Guinea Highlands Stock, Schrader Range, Papua New Guinea): ti; Boazi (Marind Stock, western Western District, Papua New Guinea): toto.

hair Moni (Wissel Lakes-Kemandoga Stock, western highlands of Irian Jaya): toe; Aturu (Trans-Fly Stock, Fly Delta): pɔl; Kaeti (Central and South New Guinea Stock, south-eastern Irian Jaya): ron.

rain Nomad (Kubo dialect) (Central and South New Guinea Stock, Upper Strickland area): hũĭ; Dəra (Senagi sub-phylum-level Family, western West Sepik District and overlapping into Irian Jaya): kue; Dubu (Pauwasi Sub-Phylum, eastern border area of northern Irian Jaya): kəwei; Ekagi (or Kapauku) (Wissel Lakes-Kemandoga Stock, western highlands of Irian Jaya): edi.

leaf Pisa (Central and South New Guinea Stock, south-eastern Irian Jaya): rõ; Nambu (Trans-Fly Stock, Trans-Fly area, Western District, Papua New Guinea): (æ)r̃au.

moon Kamoro (Central and South New Guinea Stock, south-eastern Irian Jaya): pura; Kuman (East New Guinea Highlands Stock, Chimbu District, Papua New Guinea): ba.

star Enga (East New Guinea Highlands Stock, Enga District, Papua New Guinea): bui; Tonda (Trans-Fly Stock, western Trans-Fly, Western District, Papua New Guinea): bətᵊge; Yaqay (Marind Stock, south-eastern Irian Jaya): mind.

mouth Awyi (Border Stock, north-eastern Irian Jaya): miŋgir; Kalam (East New Guinea Highlands Stock, Schrader Range, Papua New Guinea):

mɛŋk; Kiwai (Trans-Fly Stock, Fly Delta, Western District, Papua New Guinea): magota; Kati (Central and South New Guinea Stock, south-eastern Irian Jaya): moŋgot.

water Awin (Central and South New Guinea Stock, Western District, Papua New Guinea): waɛ; Gira (Finisterre Stock, western Morobe District, Papua New Guinea): wai.

The varied distribution of Austronesian loanwords such as those listed above, in individual languages and language groups in different parts of the Trans-New Guinea Phylum is of interest:

In north-eastern parts of the mainland and the neighbourhood of the Markham Valley through which an Austronesian migration is believed to have entered, the incidence of Austronesian loanwords in the Papuan languages is highest in the Huon and Finisterre Stock languages: the average number of them, out of ten widespread Austronesian items, is 6. In the eastern part of the East New Guinea Highlands Stock, the average is 4, and it drops progressively to 3 and 2 in its central and western parts. In the Kalam Family the average number is 3, and the same figure holds good for the Mabuso Stock of the Madang-Adelbert Range Sub-Phylum. In the central "hub" area of the mainland it is 3-4 in the centre, and drops to 2 in southern coastal areas, even to 1-2 in the Trans-Fly area. In the northern central and north-western parts of the mainland it also drops to 2 and 1-2, but it remains on a level of 3 in the eastern parts of the Irian Jaya highlands, to drop to 2-3 in their western part. In the Bomberai Peninsula, the figure is 2. In the eastern part of the mainland, south-east of the Markham Valley, it drops rapidly from 3 to 2 and 1, and lies below 1 in the eastern part of the tail-end of the mainland.

It is of interest to note that the inland areas in which Austronesian loanwords are most strongly in evidence, almost completely co-incide with those areas in which certain formally similar to identical verbal subject and object markers appear. This has considerable bearing on the study of past Papuan language migrations within the New Guinea mainland (see 3.2.3. and 3.4.1. in this volume).

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2.6. THE CENTRAL AND WESTERN AREAS OF THE TRANS-NEW GUINEA PHYLUM

2.6.1. THE TRANS-FLY (SUB-PHYLUM LEVEL) STOCK

S.A. Wurm

2.6.1.1. INTRODUCTORY REMARKS

The Trans-Fly (sub-phylum-level) Stock occupies the following areas: a) most of the Trans-Fly area of the Western District of Papua New Guinea with overlaps into the adjacent parts of Irian Jaya, b) the Fly Delta area and much of the coastal and estuarine areas and lower courses of rivers to the north of the Fly Delta as far as the eastern bank of Iviri Inlet in the Gulf District, and c) the eastern islands of Torres Strait. It constitutes a sub-phylic member of the Trans-New Guinea Phylum (see 2.5.3.3.2. in this volume).

This stock has been assigned sub-phylic status within the Trans-New Guinea Phylum in view of the aberrant nature and features of its member languages, especially of those which do not belong to the Kiwaian Family, and the relatively low number of reflexes of Trans-New Guinea Phylum proto-forms (see 2.4.1.5.5.) in them. Their frequently defective pronoun systems, the rudimentary two-gender system in many of them, the changes of the verb stems in accordance with the number of the object which is found in some of them, the changes of the first syllable of the verb forms for tense which is a feature of others, and the fact that their personal pronouns show a prevalence of set II forms (see 2.3.3.3.) (as against the typical set I forms (see 2.3.3.2.) predominating in Trans-New Guinea Phylum Languages), while object prefixes to verbs in some of them tend to show set I forms, constitute features which set them rather apart from most of the languages of the Trans-New Guinea Phylum as a whole. Also, they lack some of the features which are very widespread amongst the Trans-New Guinea Phylum languages, such as special sentence

Wurm, S.A. "The Trans-Fly (Sub-Phylum-Level) Stock". In Wurm, S.A. editor, *New Guinea area languages and language study, Vol. 1, Papuan languages and the New Guinea linguistic scene.* **C-38:323-344**. Pacific Linguistics, The Australian National University, 1975. DOI:*10.15144/PL-C38.323*

medial verb forms (see 2.5.2.3.2.), though other typical Trans-New Guinea Phylum characteristics such as classificatory verbs (see 2.5.2.3.1.) are in evidence. All this may make it seem justified to see in them remnants of pre-Trans-New Guinea Phylum languages located in a marginal area of the spread of the Trans-New Guinea Phylum languages through the New Guinea Mainland (see 3.4.1.), but influenced by the Trans-New Guinea Phylum languages to such an extent that they can be regarded as, even if in many ways aberrant, members of the Trans-New Guinea Phylum.

The languages of the Kiwaian Family of the Trans-Fly Stock appear to have played a special role in this. They show quite strong links with languages of the Upper Fly area (Wurm 1951; C.L. Voorhoeve, personal communication) and seem to constitute a comparatively recent immigrant element into the Trans-Fly area. As a result of their contacts with the originally probably unrelated earlier Trans-Fly languages, the Kiwaian languages were influenced by the former in their typology and structure. At the same time, they and apparently also other Trans-New Guinea Phylum languages influenced these earlier languages to a point where they can now be classified as aberrant members of the Trans-New Guinea Phylum. In the light of this, the Kiwaian languages link more closely with other Trans-New Guinea Phylum languages than the other members of the Trans-Fly Stock, whereas they are at the same time, more closely related to the latter than any other Trans-New Guinea Phylum languages.

Amongst the stock-level members of the Trans-New Guinea Phylum, the sub-phylic Yelmek-Maklew (or Bulaka River) stock-level Family (Voorhoeve 1968) appears to be more closely related to the Trans-Fly Stock than some other stocks, though the level of lexical relationship between the two is not very high as is evidenced by lexicostatistical percentages averaging around 9%. However, there are several significant typological and structural similarities between members of the two stocks (Boelaars 1950) and formal similarities of morphemes. For this reason, the Trans-Fly and the Bulaka River sub-phylum-level Stocks have been combined into a superstock (see 2.2.5. in this volume for a definition of this term), the Trans-Fly-Bulaka River sub-phylum-level Super-Stock (see 2.5.3.3.2.). The Bulaka River sub-phylum-level Family will be discussed in detail in 2.6.2.2.3. in this volume.

2.6.1.2. ESTABLISHMENT OF THE TRANS-FLY STOCK

The classification of the languages of what is today recognised as the Trans-Fly Stock has a quite complex history (Wurm 1971a), with the assignment of individual languages to certain families and other groups, and the combination of families into stocks and higher-level groupings changing several times in the light of the rapid progress of our linguistic knowledge of the area in recent years (Voorhoeve 1968, 1970; unpublished and referred to in the supplement to Wurm 1971b).

The present picture emerged as a result of extensive fieldwork carried out by Wurm in the Trans-Fly area in 1970, and though there may still be some areas of doubt (Wurm 1971a), the picture presented below constitutes a great advancement over earlier classifications. In 1973, the Waia language located in the triangle formed by the Fly and Bamu River Deltas in the south and east, and the lower Aramia River in the north, and identified by Franklin (1973), was recognised by Wurm as a member of the Pahoturi River Family in the Trans-Fly Stock.

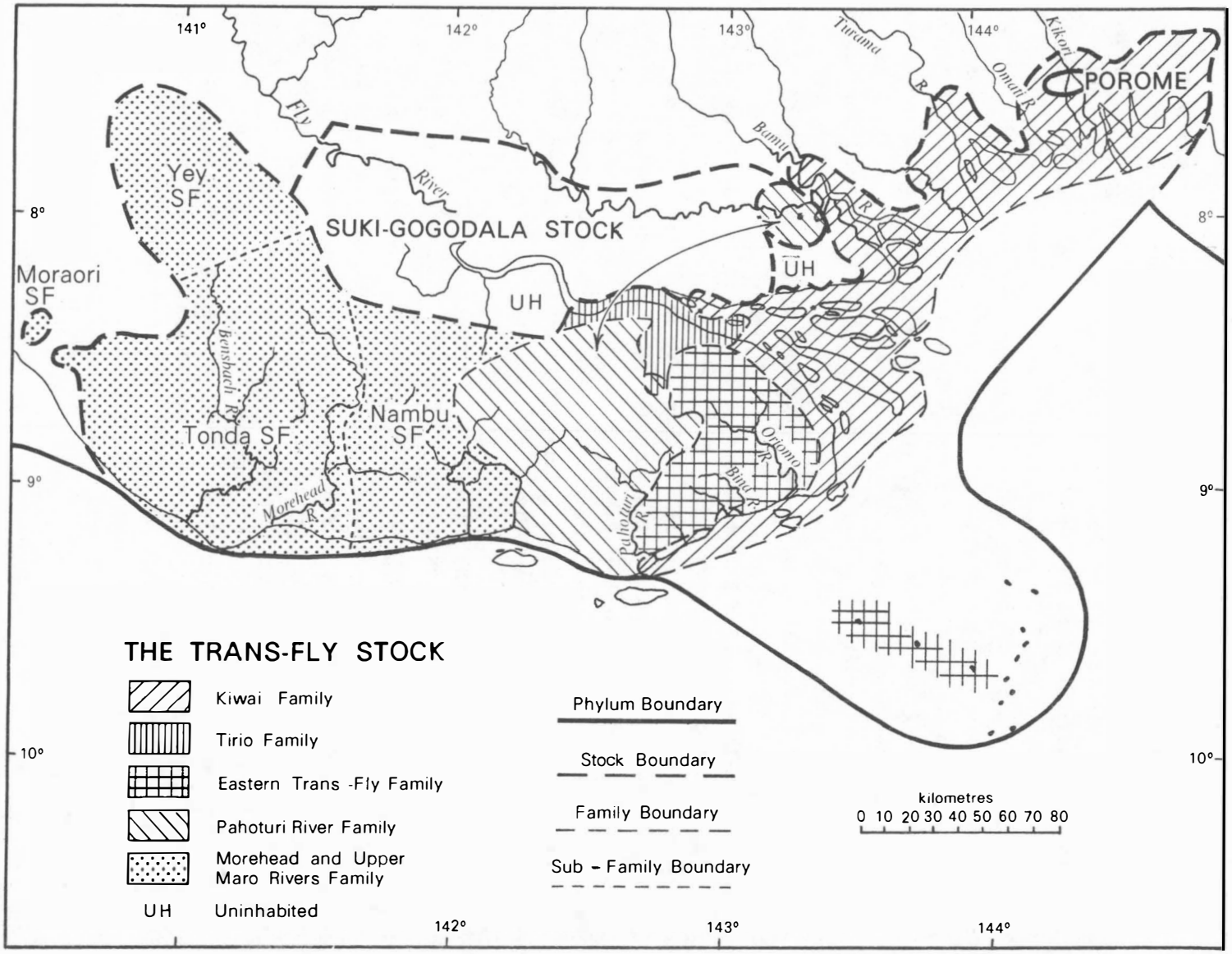
In their work which laid the foundations to the establishment of the Trans-New Guinea Phylum, McElhanon and Voorhoeve (1970) took account of some languages now included in the Trans-Fly Stock, and recognised their membership to the phylum. This work was later extended by Wurm to other languages of the stock (see 2.4.1.5.1. in this volume).

Apart from the studies referred to above, Ray's (1907, 1923, 1931) and Riley's ((and Ray) 1930-31, Riley 1931) work in languages of the Kiwaian Family of the Trans-Fly Stock may be mentioned here.

2.6.1.3. THE CONSTITUENT FAMILIES OF THE TRANS-FLY STOCK AND THEIR LOCATIONS

The Trans-Fly Stock consists of five families, one of them subdivided into four sub-families. One of these sub-families could well be regarded as constituting a separate family within the stock (see below 2.6.1.4.) thus bringing the number of the constituent families of the stock to six.

Of these five (or six) families, the Kiwaian Family occupies much of the south-eastern and eastern coasts of the Trans-Fly area, parts of the southern (right) and northern (left) banks of the Fly Delta and several islands in it, and the coastal areas and lower courses of the rivers in the Bamu, Gama, Turama, Kikori, Urama and Era Rivers areas in the Western and Gulf Districts as far east as the eastern bank of Iviri Inlet.


141°
142°
143°
144°
8°
9°
10°
Fly River
Bamu R.
Turama R.
Kikori R.
Omati R.
POROME
Yey SF
SUKI-GOGODALA STOCK
Moraori SF
UH
Benshach R.
Tonda SF
Nambu SF
Morehead R.
Pahoturi R.
Oriomo R.
Binai R.
THE TRANS-FLY STOCK
Kiwai Family
Tirio Family
Eastern Trans -Fly Family
Pahoturi River Family
Morehead and Upper Maro Rivers Family
UH Uninhabited
Phylum Boundary
Stock Boundary
Family Boundary
Sub - Family Boundary
kilometres
0 10 20 30 40 50 60 70 80

The Tirio Family occupies a section of the right bank of the upper region of the Fly Delta, Sumogi Island in the Fly River, and a part of the Mituri River area.

The Eastern Trans-Fly Family takes in the Binaturi and Oriomo Rivers area and most of the country between the Binaturi and Pahoturi Rivers in the Trans-Fly area, and the eastern islands of Torres Straits.

The Pahoturi River Family occupies the Pahoturi River area and the country to the west and north-west of it, as well as, to the north of the Fly River, the corner of country bordered by the left bank of the Fly Delta in the south, the Bamu Delta in the east, and the Lower Aramia River in the north.

The Morehead and Upper Maro Rivers Family occupies the Morehead River area and much of the country to the east of it including Strachan Island, as well as the region between the Morehead and Bensbach Rivers, the Bensbach River area itself, and also the Upper Maro River area in Irian Jaya and one village far to the north of the Bensbach area.

The Moraori Sub-Family in it which could perhaps be regarded as a separate family (see 2.6.1.4.) constitutes the western-most extremity of the family and is separated from it by a stretch of country whose inhabitants speak the Marind language (see 2.6.2.2.2.2.1. in this volume).

2.6.1.4. COMPOSITION OF THE TRANS-FLY STOCK

The Trans-Fly Stock shows the following composition (the population figures are close approximations and based on 1970 census figures)- Arabic numbers indicate languages, and lower case letters dialects:

Trans-Fly Stock			35,000
A) Kiwaian Family			22,700
1) Southern Kiwai			9,700
a) Coastal Kiwai dialects		3,800	
Southern Coastal Kiwai	1,800		
Eastern Coastal Kiwai	2,000		
b) Daru Kiwai		1,000	
c) Island Kiwai		4,500	
d) Doumori		400	
2) Wabuda			1,700
3) Bamu Kiwai			4,400
a) Sisiame		2,850	
b) Pirupiru		850	
c) Middle Bamu		700	

4) Morigi		700
5) Kerewo		2,200
6) North-Eastern Kiwai		3,700
a) Urama	1,700	
b) Gope	1,300	
c) Gibaio	700	
7) Arigibi		300
B) Tirio Family		1,350
1) Tirio		280
2) Aturu } ?		220
3) Lewada-Dewara }		450
4) Mutum (Paswam)		400
C) Eastern Trans-Fly Family		4,700
1) Bine		1,800
2) Gidra		1,600
3) Gizra		600
4) Miriam		700
D) Pahoturi River Family		3,000
1) Agöb } ?		1,100
2) Idi }		900
3) Waia		1,000
E) Morehead and Upper Maro Rivers Family		3,310
Ea) Nambu Sub-Family		800
1) Nambu }		700
2) Iauga (Parb) }		25
3) Dorro		75
Eb) Tonda Sub-Family		1,470
1) Upper Morehead (Rouku)		350
2) Lower Morehead (Peremka)		200
3) Tonda		600
4) Kanum		320
Ec) Yey sub-family-level Isolate		1,000
Ed) Moraori sub-family-level Isolate		40

Note: There may be good grounds (see 2.6.1.5.1.) for regarding Ed) as constituting a separate family within the Trans-Fly Stock. In such a classification, the Morehead and Upper Maro Rivers Family would only contain the sub-families Ea), Eb) and Ec), and one would have to add:

F) Moraori family-level Isolate 40

In addition to these languages, the following are located in, or adjacent to, the Trans-Fly area:

1) Suki, a family-level isolate of the Suki-Gogodala Stock (Voorhoeve 1970, see 2.6.2.2.1.1. in this volume).

2) On Saibai, Boigu and Dauan Islands off the south coast of the Trans-Fly area, a dialect of Mabuiag, an Australian language, is spoken (Ray 1907).

2.6.1.5. INTERNAL RELATIONSHIPS IN THE TRANS-FLY STOCK

2.6.1.5.1. *FAMILY-LEVEL INTERRELATIONSHIPS*

The degrees of interrelationship within the individual families of the Trans-Fly Stock are quite varied, and in some cases, manifest themselves more clearly on the structural level than on the lexical.

With the members of the Kiwaian Family, both lexical and structural relationships are generally close to very close. Percentages of basic vocabulary cognates, on the basis of a 200-items list, lie mostly above to well above 50%, with the lowest figure observed being 46%.

Within the Tirio Family, there is great similarity on the structural level, but the percentages of shared basic vocabulary cognates range largely from the mid-thirties to the mid-forties only, except for Aturu and Lewada-Dewara which, with 78% sharing, could well be regarded as constituting dialects of one language. Further study may show the lexical interrelationship between the Tirio Family languages to be in fact closer.

The members of the Eastern Trans-Fly Family are quite similar in basic features of their structures as well as in quite a few structural details, though there are some differences in the latter, especially between Gizra and Miriam on the one hand, and Bine and Gidra on the other. Lexically, the relationship between the four languages is not close: the percentage figures of shared basic vocabulary cognates lie generally between the mid-thirties to the mid-forties, though further study is likely to show them to be higher. Miriam shares exceptionally low percentages, in the high twenties, with Bine and Gidra, though close to 40% with Gizra. These low percentage figures may be due to the presence of Mabuiag, i.e. Australian, loanwords in Miriam (see 2.16.2.2.).

Of the members of the Pahoturi River Family, Agöb and Idi are almost dialects of one language, sharing about 77% basic vocabulary cognates and being near-identical in structure. Waia shares only just under 30% with both Agöb and Idi, but it contains a considerable number of loanwords in its basic vocabulary from other languages adjacent to it, i.e. Kiwaian languages and Gogodala of the Gogodala-Suki Stock (see 2.6.2.2.1.2.1. in this volume). What little is known of its structure appears to link with that of Agöb and Idi to some extent, though there seem to be some differences.

Within the Morehead and Upper Maro Rivers Family, the situation is more complex:

In the Nambu Sub-Family, Iauga (or Parb) is apparently a dialect of Nambu, and Dorro shares about 60% basic vocabulary items with Nambu.

In the Tonda Sub-Family, Upper Morehead (Rouku), Lower Morehead (Peremka) and Tonda show between 55% and over 70% basic vocabulary cognates, whereas Kanum shares only about 40% with any of these three languages.

On the family level, the members of the Nambu and Tonda Sub-families share cognate percentages ranging from the high twenties to beyond the mid-thirties, though again, the figures may well be found to be higher when further studies have been carried out. The percentages of basic vocabulary items shared by the one-member Yey Sub-Family with those of the Nambu and Tonda Sub-Families are in the mid-to-high twenties with the highest established figure of 30% sharing between Yey and Kanum - though the figures may well prove to be higher in the light of further studies. At the same time, the member languages of the three sub-families are structurally quite similar, the only important difference between them being the presence of some gender distinction with members of the Tonda and Yey Sub-Families in contrast to those of the Nambu Sub-Family.

Moraori stands both lexically and structurally rather apart: the percentages of basic vocabulary cognates shared by it with member languages of the other three sub-families are mostly in the low twenties or even below twenty - only with Yey and especially with Kanum do figures in the high twenties and low thirties appear. Lexically, it is therefore a member of the Morehead and Upper Maro Rivers Family only by virtue of a chain-relationship through Kanum and Yey. Structurally, it does also not link closely with the other members of the family, and some of its features show considerable structural and formal similarity to those of the Eastern Trans-Fly Family and to a lesser extent, to those of the Tirio and Kiwaian Families.

As has been pointed out above in 2.6.1.4. it may, in the light of what has been said above, well be that a more realistic classification of Moraori would be to assign to it the status of an independent family-level isolate within the Trans-Fly Stock.

2.6.1.5.2. *STOCK-LEVEL INTERRELATIONSHIPS*

The lexical interrelationship between members of different families within the Trans-Fly Stock is comparatively close, with percentages of shared basic vocabulary cognates ranging generally from the high teens to the mid-twenties. On the lexical level, a sub-division of the stock into two family-groups seems possible, one containing the Kiwaian, Tirio and Eastern Trans-Fly Families, and the other the Pahoturi River and the Morehead and Upper Maro Rivers Families. This sub-grouping is also borne out by correspondingly greater similarities on the structural level between member families of the two respective family-groups, except for Moraori (see above 2.6.1.5.1.). The structural similarities between the members of the Pahoturi River Family and those of the Nambu Sub-Family of the Morehead and Upper Maro Rivers Family in particular are quite considerable.

2.6.1.6. TYPOLOGICAL AND STRUCTURAL FEATURES OF THE LANGUAGES OF THE TRANS-FLY STOCK

In general, the languages of the Trans-Fly Stock display a good measure of typological and structural similarity, and share a considerable number of features. On the phonological level, they all share a suprasegmental system which manifests itself in a complex stress system with rhythm principles, and in addition, the languages of the Kiwaian and Eastern Trans-Fly Families seem to possess a two-tone system with usually low to very low functional load. The segmental phonologies are mostly quite complex; only the languages of the Kiwaian Family have quite simple systems, and those of Bine and apparently also of Miriam of the Eastern Trans-Fly Family are also much simpler than those of the other languages, though they are more complicated than those met with in the Kiwaian Family languages.

On the morphological level, a large number of features are generally shared. These are: the distinction of at least three numbers: singular, dual and plural in the verb morphology, with an additional trial number present either in full or at least in a rudimentary form or in traces. At the same time, the pronominal system usually shows only singular and plural forms. Only the languages of the Kiwaian Family have forms

for all numbers, but the dual and trial forms are clearly derived from the plural forms. The languages of the Nambu Sub-Family of the Morehead and Upper Maro Rivers Family possess dual and trial forms in their pronoun system, but they are rarely used. The pronoun systems of the languages of the Pahoturi and the Morehead and Upper Maro Rivers Families (except of Moraori) are also defective in having only one form for two distinct pronouns. In the first person plural of the pronoun system of the languages of the Eastern Trans-Fly Family, inclusive and exclusive forms are distinguished, and this distinction carries over into the indication of the person with the verb. Possession is, in all the languages, indicated by the preposed personal pronouns which carry special suffixes to mark them as possessive. The presence of an ergative form is widespread, although it appears to be absent in the languages of the Tirio Family. In Moraori its presence is doubtful and in the languages of the Kiwaian Family it is somewhat rudimentary. All languages have a number of noun and pronoun suffixes to indicate local relationships. In most languages, adjuncts precede the words which they determine, although in the languages of the Tirio Family and in Moraori some adjuncts are met with which follow such words.

In the complex verb morphology, features shared by the languages include the indication of the person and number of the object with the verb though prefixes in all languages (with the partial exception of Moraori and the languages of the Kiwaian Family) and in some cases in combination with suffixes. In Moraori, the object is indicated through prefixes with some verbs, but other verbs have object suffixes or infixes. In the languages of the Kiwaian Family, the indication of the person of the object is rudimentary. To some extent, the object prefixes are subject-object portmanteau prefixes in all the languages. In addition to the partial marking of the subject through these prefixes and, especially with intransitive verbs (and in the languages of the Kiwaian Family in most verb forms), through pure subject-prefixes, all languages except those of the Tirio Family have suffixes to mark at least the number, if not the person, of the subject. Subject-person suffixes are absent in the languages of the Kiwaian and Tirio Families, in Miriam and in part in Gizra of the Eastern Trans-Fly Family, and are defective in the languages of the Morehead and Upper Maro Rivers Family, except for Moraori. In all languages except Moraori, the number of the object is indicated by suffixes (in the languages of the Tirio Family by affixes including suffixes). However the languages of the Kiwaian, Tirio, and Eastern Trans-Fly Families, and Moraori, show changes in the forms of the stems of the verbs in accordance with the number of the

object, and in some cases also with the number of the subject. In those of the Pahoturi River Family only a few rudimentary changes of this kind occur. All languages have a number of past tenses, but all of them, except those of the Kiwaian Family, have basically only one future and present. In the languages of the Pahoturi River and the Morehead and Upper Maro Rivers Families, tenses are indicated through changes in the first syllable of the verb forms irrespective of whether they are part of the verb stem, or prefixes. In addition, tenses are indicated in these families through suffixes, and through changes in the suffixes denoting the number of the subject and the object. Similar indication is to some extent present in the languages of the Kiwaian and Eastern Trans-Fly Families: in the former, tenses are denoted in part by tense forms of the subject prefixes, and in part through suffixes and tense-forms of the suffixes denoting the number of the subject. In the languages of the Eastern Trans-Fly Family, tenses are denoted predominantly through suffixes, as well as by tense-forms of the suffixes indicating the number of the subject and the object. Tense-forms of the subject-object portmanteau prefixes play only a very minor part. In the languages of the Tirio Family, tenses are denoted by tense-forms of the subject prefixes, as well as through suffixes and particles. In Moraori, tenses are indicated by tense-forms of the subject suffixes.

A very important feature of the majority of the languages of the Trans-Fly Stock is the distinction between two genders, masculine and feminine. This feature is present in the languages of the Eastern Trans-Fly and Tirio Families, and of the Tonda, Yey and Moraori Sub-Families of the Morehead and Upper Maro Rivers Family. However, in all these languages, except for those of the Tirio Family, the indication of gender is limited to the marking of the third person object with verbs, and to the subject marking of a few verbs. No gender distinction is present in the pronoun systems. Only in the languages of the Tirio Family can gender distinction be observed in the third person in the pronoun system, and in the subject and object indication with the verb.

Regarding other features of the verb, it may be mentioned that in all the languages, the negative is indicated by a particle and in most languages, except apparently those of the Pahoturi River Family, there are traces of a negative conjugation. Full negative conjugations are present in the languages of the Kiwaian and Tirio Families, and in Moraori. Imperative forms are simple in the languages of the Pahoturi River and the Morehead and Upper Maro Rivers Families, but there are several imperatives in those of the Kiwaian, Tirio and Eastern Trans-Fly Families.

When assessing the typological and structural features of the languages of the Trans-Fly Stock as a whole, it seems evident that these languages share a considerable number of them. With regard to characteristics which are not generally shared, a distinct cleavage is observable between the languages of the Pahoturi and the Morehead and Upper Maro Rivers Families (except for Moraori) on the one hand, and those of the Kiwaian, Tirio and Eastern Trans-Fly Families on the other, with Moraori siding in part with this second group. The languages of the Kiwaian and Tirio Families, and Moraori, are in some ways aberrant when looked at from the point of view of the structural characteristics of the family as a whole, and those of the Eastern Trans-Fly Family also have a few aberrant features.

The most prominent features of the first-named group are: changes in the initial syllable of verb forms for tense, no changes in the verb stem according to the number of the object or the subject (except for a few traces of this in the languages of the Pahoturi River Family), defectiveness of the mostly limited pronoun system which is characterized by the presence of only one form for two different pronouns, and simple imperatives. The absence of a two-gender system in the languages of the Pahoturi River Family and the Nambu Sub-Family of the Morehead and Upper Maro Rivers Family may be mentioned in passing. The pronouns in the languages of this first group display far-reaching formal similarity. On the phonological level, all these languages appear to lack a tonal system.

The second group is typologically and structurally less homogeneous than the first. Its most prominent features are the presence of stem changes in accordance with the number of the object (and sometimes also the subject), the absence of the defectiveness of the pronoun system which is characteristic of the languages of the first group, and the presence of more than one imperative. Moraori shares the first of these two features. A two-gender system is present in the languages of the Eastern Trans-Fly and Tirio Families, and constitutes a full system in the latter. It is lacking in the languages of the Kiwaian Family. At the same time, the languages of the Kiwaian and Tirio Families have full negative conjugations - in those of the Eastern Trans-Fly Family, only traces of it are present. Moraori also has a full negative conjugation, and it may be mentioned that the gender markers in the Moraori verb are formally identical with those met with in the languages of the Eastern Trans-Fly Family. The pronoun systems of this second group display very much less formal similarity than is the case with the pronoun systems of the first group, and they also

show little similarity with those of the first group, except for Moraori. On the phonological level, the languages of the Kiwaian and Eastern Trans-Fly Families seem to possess a two-tone system of generally very low functional load, but it appears to be absent from the languages of the Tirio Family.

Of the aberrant features of the languages of the Kiwaian Family, the following may be mentioned: a rudimentary system of indication of the person or the object by prefixes; the distinction of only two persons, speaker and non-speaker, in the verbal system (but three persons are distinguished in the pronoun system); the presence of three future tenses; the apparent absence of a gender system; and the presence of a comparatively simple phonology.

The most prominent aberrant features of the languages of the Tirio Family are the absence of suffixes to mark the number of the subject and object, and the limitation of the subject-marking to prefixes. Also, the presence in it of a full-gender system in the third person both in the pronoun system and in the marking of person with the verb is exceptional for languages of the Trans-Fly Stock.

The most striking aberrant feature of Moraori is the appearance of object suffixes and infixes (though the object prefixes characteristic of the languages or the Trans-Fly Stock are also found with some verbs) and the exclusive marking of the subject through suffixes.

An unusual feature of the languages of the Eastern Trans-Fly Family is the presence of inclusive and exclusive forms in the first person plural, both in the pronoun system and the person marking system with the verb.

The features of the Island Kiwai dialect of the Southern Kiwai language of the Kiwaian Family have been briefly described and illustrated in (III) 7.4.5.8.3.. However, for the benefit of readers who have no access to that volume III, that presentation has been given below in 2.6.1.7. as well.

2.6.1.7. ISLAND KIWAI STRUCTURAL FEATURES

On the morpho-syntactic level, the dialects of Southern Kiwai are very similar, though Island Kiwai shows by far the greatest complexity. The following is a short discussion of the structure of Island Kiwai with some remarks on other Kiwaian languages:

2.6.1.7.1. *PHONOLOGY*

On the phonological level, Island Kiwai, and all Kiwaian languages, are quite simple, except for their suprasegmental systems.

Consonants:

p	t	k	ʔ
b	d	g	
m	n		
	s		
w	r		

Vowels:

i		u
e		o
	a	

Diphthongs: au, ou

Vowel length is absent in Island Kiwai, though frequent in Wabuda and also encountered in the northern languages.

The supra-segmental features manifest themselves in a complex stress system with rhythm patterns, and a two-tone system. The functional load of the latter is very low, and this seems to be the same in all Kiwaian languages in which it is met with (it is apparently absent from Wabuda), except for North-Eastern Kiwai (and Arigibi) where it seems to be quite high.

The syllable structure is very simple: no consonant clusters occur, and all syllables are open. Sequences of up to four vowels have been found.

Vowel-harmony is present as in most Kiwaian languages and affects the vowels of affixes, especially prefixes. It is particularly strong in Coastal Kiwai, Doumori and Wabuda.

2.6.1.7.2. *MORPHOLOGY (AND SYNTAX)*

The main features of Island Kiwai morphology (and syntax) are as follows:

In the morphology four numbers are distinguished, i.e. singular, dual, trial and plural. However, in the verb morphology, only two persons, speaker and non-speaker, are differentiated, e.g. n-eauri = *I see one*, r-eauri = *you*(sg) [or *he*] *see*[*s*] *one*. Only two basic sets cf personal

pronouns are found, one for singular and one for plural - the dual and trial forms are derived from the plural forms through suffixes, i.e.

	sg	pl	dl	tl
1	mo	nimo	nimo-to	nimo-ibi
2	ro	nigo	nigo-to	nigo-ibi
3	nou	nei	nei-to	nei-bi

Possession is expressed through the preposed personal pronouns which often show the suffix -ro in the first and second person singular, e.g. mo-ro moto = *my house*. A large range of noun (and pronoun) suffixes are met with and denote a variety of local relationships as well as the ergative. Adjuncts normally precede the words which they determine, e.g. mo pai umoro = lit. *I not know*, wade moto = *good house*. (In Wabuda and the languages further north and north-east, some adjuncts to verbs such as the negative marker follow the verb, e.g. Bamu Kiwai (Sisiame dialect): mo umoro pua = *I don't know*. In Wabuda, also other adjuncts are found to follow the determined word in several instances, whereas in all other Kiwaian languages and dialects they precede them in such cases.)

The direct object precedes the verb, e.g. nimogo gi moto pai eauri = lit. *we that house not saw*. (In Wabuda, and sometimes also in Bamu Kiwai, the direct object often follows the verb).

The verb morphology is elaborate. The verb stem, and sometimes also its prefixes, undergo changes to denote non-singularity of the object, e.g. eauri = *see one*, iauri = *see more than one*, oruso = *eat one*, iriso = *eat more than one*.

Suffixes added to the verb stem indicate a number of aspects such as punctiliarity, repetitiveness and continuity, e.g. asidim-o = *keep on covering one object*, asidim-ai = *cover one object once*, iasidim-ai = *cover more than one object once*, iasidim-uti = *cover more than one object in separate actions*.

Prefixes to the verb stem denote modes of actions such as spontaneity, reflexivity, and action with something, e.g. eauri = *see one*, er-eauri = *see oneself*, em-eauri = *see, look at, one for another* (i.e. *look after*), egu = *go*, em-ogu = *go for one, fetch one*, ow-ogu = *go with one* (i.e. *take one*), etc.. Combinations of more than one of these prefixes are found in many instances.

Tenses are quite numerous: there are two past tenses, one present, and three futures. They are indicated by tense forms of subject prefixes, together with combinations of prefixes, suffixes and tense forms

of the affixes which denote the number of the subject. In many verb forms, tense is signalled several times, often first in a general form by the shape of the subject prefix - i.e. present, past or future only - which is then followed by the indication of a specific past or future tense. A tabular representation of tense marking may illustrate this point most clearly (S = Verb-stem):

		Present	Near Past
speaker	sg	n-S	n-S
	dl	n-S-duru-do	n-S-do
	pl	n-S-duru-mo	n-S-mo
	tl	n-S-bi-duru-mo	n-S-bi-mo
non-speaker	sg	r-S	w-S
	dl	r-S-duru-do	w-S-do
	pl	r-S-duru-mo	w-S-mo
	tl	r-S-bi-duru-mo	w-S-bi-mo

		Definite Past
speaker	sg	n-S
	dl	n-S-ru-do
	pl	n-S-ru-mo
	tl	n-S-bi-ru-mo
non-speaker	sg	g-S
	dl	g-S-ru-do
	pl	g-S-ru-mo
	tl	g-S-bi-ru-mo

		Immediate future	Indefinite future
speaker	sg	n-S-ri	ni-do-S-ri
	dl	ni-do-S-ri	ni-du-do-S-ri
	pl	ni-mo-S-ri	ni-du-mo-S-ri
	tl	ni-bi-mo-S-ri	ni-bi-du-mo-S-ri
non-speaker	sg	w-S-ri	wi-do-S-ri
	dl	wi-do-S-ri	wi-du-do-S-ri
	pl	wi-mo-S-ri	wi-du-mo-S-ri
	tl	wi-bi-mo-S-ri	wi-bi-du-mo-S-ri

		Remote future
speaker	sg	ni-mi-S-ri
	dl	ni-mi-du-do-S-ri
	pl	ni-mi-du-mo-S-ri
	tl	ni-mi-bi-du-mo-S-ri
non-speaker	sg	ri-mi-S-ri
	dl	ri-mi-du-do-S-ri
	pl	ri-mi-du-mo-S-ri
	tl	ri-mi-bi-du-mo-S-ri

As can be seen from these tables, the present, near past and definite past forms are identical in the speaker singular.

Habitual forms occur in four tenses: present, near past, definite past and future. Their characteristic marker is -a- which appears after the subject prefix in the present and past tenses, and after the future marker or the subject number marker in the future. The combination of the tense affixes is different in the habitual present and past tenses from that met with in the non-habitual present and past tenses. They are as follows:

		Present habitual	Near past habitual
speaker	sg	n-a-S-go	n-a-S-go
	dl	n-a-du-do-S-go	n-a-duru-do-S-go
	pl	n-a-du-mo-S-go	n-a-duru-mo-S-go
	tl	n-a-bi-du-mo-S-go	n-a-bi-duru-mo-S-go
non-speaker	sg	r-a-S-go	g-a-S-go
	dl	r-a-du-do-S-go	g-a-duru-do-S-go
	pl	r-a-du-mo-S-go	g-a-duru-mo-S-go
	tl	r-a-bi-du-mo-S-go	g-a-bi-duru-mo-S-go
		Past habitual	Future habitual
speaker	sg	n-a-S-go	ni-d-a-S-
	dl	n-a-ru-do-S-go	ni-du-d-a-S-
	pl	n-a-ru-mo-S-go	ni-du-m-a-S-
	tl	n-a-bi-ru-mo-S-go	ni-bi-du-m-a-S-
non-speaker	sg	g-a-S-go	ni-d-a-S-
	dl	g-a-ru-do-S-go	wi-du-d-a-S-
	pl	g-a-ru-mo-S-go	wi-du-m-a-S-
	tl	g-a-bi-ru-mo-S-go	wi-bi-du-m-a-S-

In the future habitual, the final suffix varies between -ri ∿ -go ∿ θ, with θ most common with a singular subject. -ri is more frequently found in non-speaker non-singular forms than in speaker non-singular ones. A few instances have been found in which in non-speaker non-singular forms, -ri appears at the end of the prefix combination and (-ri)-go after S, e.g.: wi-du-m-a-ri-iarug-uti-ri-go = *they will habitually speak (many things on many occasions)* = ([non-speaker subject in future form]-[future]-[pl subject]-[habituality]-[future]-[*say more than one thing*]-[action carried out in separate actions, one at a time]-[future]-[future∿habitual marker]). This phenomenon may be interpreted as denoting emphasis on the future habituality.

Island Kiwai has a large range of different imperative forms denoting actions ordered to be carried out immediately, or in the near future, or at some future time, or repeatedly, or habitually, or as something that must or should be done, or as something whose performance is only advised and not definitely ordered. The forms differ according to the number of persons addressed. A number of permissive and conditional forms exist as well, but the detailed discussion of these forms would go beyond the scope of this presentation.

A characteristic feature of Island Kiwai and of all Kiwaian languages, is the fact that the elaboration of the verb forms as mentioned above is restricted to the affirmative. In the negative, only two basic forms occur in most Kiwaian languages, one denoting present and past, and one the future. For instance, in Island Kiwai, the verb base without any tense and subject (but with object number) affixes preceded by pai is used to indicate the present or past negative, e.g. nou pai agiwai dubu-gido = *he did not give one to the man,* lit. *he* negative *(give one) (man-to).* At the same time pai plus the verbal noun which is formed by prefixing k- to the verb base, denotes the future negative. In the latter, -go is always suffixed to the verb base, and the number of the subject shown by the suffixes -toribo- = dl, -bi- = tl and -potoro- ∿ -θ- = tl or pl before -go, e.g. nimoto pai k-ogu-toribo-go = *we two will not go = (we-two)* negative ([verbal noun marker]-[*go*]-[dl subject]-[special marker]). At the same time, pai + habitual present forms indicate the cessation of a habitual action, e.g. nou pai r-a-iriso-go *he does not eat (these things) any more = he* negative ([non-speaker subject in present form]-[habituality]-[*eat more than one*]-[habitual marker]). Omission of the suffixes denoting the number of the subject (i.e. of non-singular subjects) in such negative habitual forms appears to indicate a straight negation of the habituality, e.g. nei pai r-a-eregedio-go = *they do not work* habitually = *they* negative ([non-

speaker subject in present form]-[habituality]-[*work*]-[habitual marker]).

A comparable paucity of negative forms exists in the imperative forms: only an ordinary and a strong prohibitive are present.

It has been mentioned above that the verb stem in the Kiwaian languages undergoes changes to denote non-singularity of the object. This applies to all verb forms, and in addition, suffixes are added to the verb base to indicate duality or triality of the object. In Island Kiwai, and in all Kiwaian languages, these suffixes are -(a)ma- = dl and -bi- = tl, e.g. Island Kiwai: iauri-ama = *see two*, iauri-bi = *see three*. At the same time, the person of the object is indicated by the subject-object portmanteau prefix n- only if the speaker is the object, and the non-speaker the subject, e.g. nimoto iga-n-itamudiro-ama-ri = *will you one teach us two? = (you-two)* ([affirmative interrogative]-[speaker object]-[*teach more than one*]-[dl object]-[future]) (absence of other tense and subject number markers indicates immediate future and non-speaker singular subject, absence of the ergative marker from the free person marker denotes that it is the object, not the subject).

The combination of the affixes can result in quite lengthy verbal forms, e.g. ri-mi-bi-du-mo-i-odi-ai-ama-ri-go = *in the remote future, they (or you) three will definitely string two bows at a time* = ([non-speaker subject in remote future form]-[remote future]-[tl subject]-[future]-[more-than-two subject marker]-[more-than-one object]-[*string bow*]-[single action]-[dl object]-[future]-[emphasis]).

Of other verbal forms in Island Kiwai, only the occurrence of a number of prefixes and particles may be mentioned which appear before the subject markers (except for the incomplete action marker -og- which follows them) and denote assertion or certainty (ai-), completion of an action (tau-), incompleteness of an action (-og-), repeated action (amu-), actual performance or succession of actions (aime-), affirmative (ai-, ra-, iga-, igara-) and negative (pura-) interrogation, temporal condition (ina-), etc.; e.g. nimoto-go netewa dubu-toribo ai-n-iwia-ma-ru-do = *we two have certainly found two men* = (*we-two*-ergative) *two* (*man*-dl) ([assertion]-[speaker subject]-[*find more than one*]-[dl object]-[past]-[dl subject]); dubu-ro tau-g-arogo = *the man said* = (*man*-ergative) ([completion]-[non-speaker subject in definite past form]-[*speak*]); nei uwo-rudo ina-g-oriboa-ru-mo nei-go aime-g-iauri-ama-ru-mo = *when they awoke, they (then) saw them-two = they (sleep-from)* ([*when*]-[non-speaker subject in definite past form]-[*awake*]-[past]-[more-than-two subject marker])(*they*-ergative) ([successive action]-[non-speaker subject in definite past form]-[*see more than one*]-[dl object]-[past]-[more-than-two subject marker]).

In Island Kiwai, a number of classificatory verbs exist which function as auxiliaries and, placed after nouns, form verbal expressions. Noun + auxiliary function as a verb stem for the purpose of the addition of person, tense and other affixes, e.g. **uba-go owai** = *cause trouble* = (*bad*-emphasis) ([*come with*] = *do*), e.g. **ai-g-a-bi-ru-mo-uba-go-ow-ai-wado-go** = *they three were certainly repeatedly causing trouble as a habit* = ([assertion]-[non-speaker subject in past form]-[habituality]-[trial subject]-[definite past marker in habitual forms]-[more-than-two subjects]-[*bad*]-[emphasis]-[*with-come* = *do*]-[repeatedly]-[habitual marker]).

2.6.1.8. CONCLUDING REMARKS

From what has been said above, especially in 2.6.1.1., it appears that the languages of the Trans-Fly Stock contain a very strong substratum which is probably the same as one found in other language and language groups further west and north-west (see 2.5.4.2.1. in this volume). It seems likely that the original languages of the Trans-Fly area were unrelated to the Trans-New Guinea Phylum languages, and that the relationship of the present-day languages of the area to other languages of the phylum is secondary in nature and attributable to the prevailing influence of Trans-New Guinea Phylum languages upon them.

The situation of Moraori requires special attention: the presence of striking typological, structural and also formal similarities between it at the western and languages of the Eastern Trans-Fly Family at the eastern extremity of the area covered by the stock constitutes a puzzle for which no immediate answer offers itself. Some connection with the past raids of the Kiwai head-hunters in the east, the Suki and Lake Murray head-hunters in the north, and those of the Marind head-hunters in the west and from the south may well have given rise to population movements in the Trans-Fly on a remarkable scale, as seems likely from the knowledge which we have of such events towards the end of the last century (Williams 1936). The fact that the single small Moraori speaking village (Mbur) with its 40 or so inhabitants is completely separated from the main body of the speakers of Trans-Fly Stock languages, with the nearest typological and structural relatives of the Moraori language far to the east, may make it possible to look upon the Moraori speakers as refugees from some distant place.

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2.6.2. CENTRAL AND WESTERN TRANS-NEW GUINEA PHYLUM LANGUAGES

C.L. Voorhoeve

2.6.2.1. INTRODUCTION

This chapter falls into two main parts. In the first part (2.6.2.2.) a survey is made of the languages which were already known to belong to the Trans-New Guinea Phylum (abbreviated: TNGP) or could be expected to belong to it, as in the case of the newly discovered languages in the Lake Plains (see 2.6.2.2.11.1.). Wherever possible, the following points will receive some attention: phonemic system (segmental and supra-segmental features), morphological processes,[1] noun-morphology and noun classes, pronouns, verb morphology, and word order in verbal sentences. These points are of importance in the typology of these languages (see chapters 2.3.2. and 2.5.2. in this volume). In many languages however such detailed information is lacking, and we will have to be content with much less. Especially, this is the case with the majority of the languages in north Irian Jaya, at present known only through wordlists of varying size and reliability.

The second part (2.6.2.3.) deals with a number of languages which hitherto had escaped classification or had been classified as members of the West Papuan Phylum (abbreviated: WPP). In this part the main emphasis is on classificatory problems, the more so because very little information is available on the structure of those languages.

In both the first and the second parts significant additions to, and modifications of, previous classifications have been made. This would not have been possible if two important new sources of data had not been made available to the writer. (cont'd on page 351)

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LEGEND TO THE FAMILY MAP OF PAPUAN LANGUAGES IN IRIAN JAYA AND PARTS OF WESTERN PAPUA NEW GUINEA

MAJOR PHYLA

TRANS-NEW GUINEA PHYLUM

5. Central and South New Guinea Stock
   a. Bosavi Family
   b. East Strickland Family
   c. Awin-Pa Family
   d. Duna Family
   e. Ok Family
   f. Awyu-Dumut Family
   g. Asmat-Kamoro Family
   h. Somahai family-level Isolate
   i. Mombum Family
7. Suki-Gogodala Stock
   a. Gogodala Family
   b. Suki family-level Isolate
8. Marind Stock
   a. Boazi Family
   b. Marind Family
   c. Yaqay Family
9. Kayagar stock-level Family
10. Sentani Stock
   a. Sentani Family
   b. Demta family-level Isolate
11. Dani-Kwerba Stock
   a. Dani Family
   b. Kwerba Family
   c. Samarokena family-level Isolate
   d. Saberi family-level Isolate
12. Dem stock-level Isolate
13. Wissel Lakes - Kemandoga Stock
   a. Uhunduni (or Amung) family-level Isolate
   b. Ekagi-Wodani-Moni Family
14. Mairasi - Tanah Merah Stock
   a. Mairasi Family
   b. Tanah Merah family-level Isolate
15. West Bomberai Stock
   a. West Bomberai Family
   b. Karas family-level Isolate

16. Mor stock-level Isolate
38. Trans-Fly sub-phylum-level Stock
    a. Kiwai Family
    b. Eastern Trans-Fly Family
    c. Pahoturi River Family
    d. Tirio Family
    e. Morehead and Upper Maro Rivers Family
39. Yelmek-Maklew (or Bulaka River) sub-phylum-level Family
40. Goliath sub-phylum-level Family
41. Oksapmin sub-phylum-level Isolate
42. Senagi sub-phylum-level Family
43. Pauwasi sub-phylum-level Stock
    a. Western Family
    b. Eastern Family
44. Border sub-phylum-level Stock
    a. Taikat Family
    b. Waris Family
    c. Bewani Family
45. Tor-Lake Plain sub-phylum-level Stock
    a. Turu family-level Isolate
    b. Central Lake Plain Family
    c. East Lake Plain Family
    d. Tor Family
    e. Mawes family-level Isolate
    f. Uria family-level Isolate
46. Morwap sub-phylum-level Isolate
47. Molof sub-phylum-level Isolate
48. Usku sub-phylum-level Isolate
49. Tofamna sub-phylum-level Isolate
50. Nimboran sub-phylum-level Family
51. Kaure sub-phylum-level Stock
    a. Kaure Family
    b. Kapori family-level Isolate
    c. Sause family-level Isolate
52. South Bird's Head sub-phylum-level Stock
    a. South Bird's Head Family
    b. Inanwatan Family
    c. Konda-Yahadian Family
53. Kolopom (or Frederik Hendrik Island) sub-phylum-level Family

WEST PAPUAN PHYLUM

55. Central Bird's Head Stock
   a. North Bird's Head Family
   b. Central Bird's Head Family
56. West Bird's Head stock-level Family
57. Amberbaken stock-level Isolate
58. Borai-Hattam sub-phylum-level Family

MINOR PHYLA

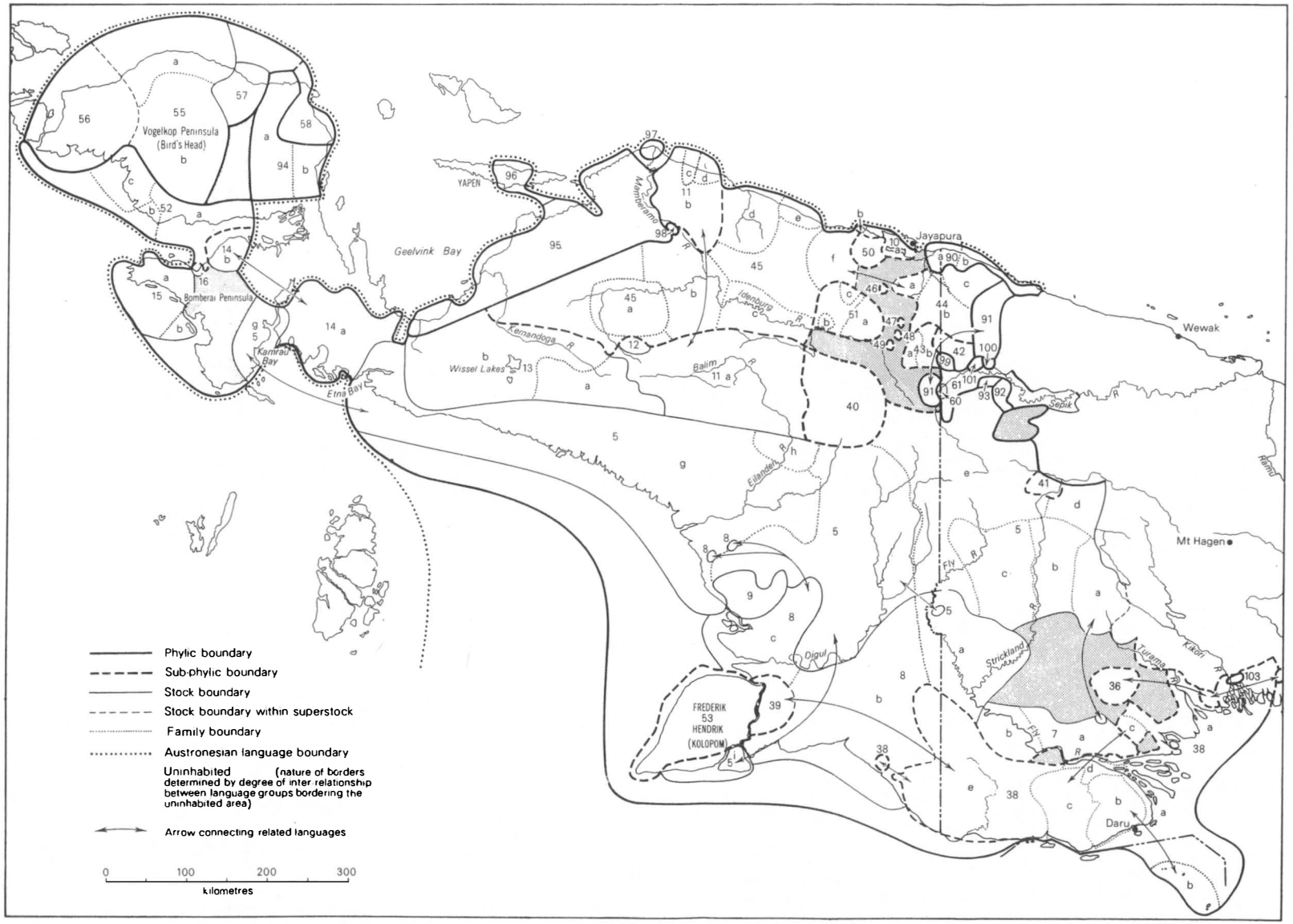
90. Sko phylum-level Stock
   a. Sko Family
   b. Vanimo Family
91. Kwomtari phylum-level Stock
94. East Bird's Head phylum-level Stock
   a. Meax Family
   b. Mantion family-level Isolate

GEELVINK BAY PHYLUM

95. East Geelvink Bay stock-level Family
96. Yava stock-level Isolate

PHYLUM-LEVEL ISOLATES

97. Warenbori phylum-level Isolate
98. Taurap (or Borumeso) phylum-level Isolate
99. Yuri phylum-level Isolate
100. Busa phylum-level Isolate
101. Nagatman phylum-level Isolate
103. Porome (Kibiri) phylum-level Isolate



FAMILY MAP OF PAPUAN LANGUAGES IN IRIAN JAYA AND PART OF WESTERN PAPUA NEW GUINEA

(text continued from page 345 above) Firstly, J.C. Anceaux kindly gave him access to the rich store of lexicographic data he collected in the Papuan languages of west and north Irian Jaya. These materials, word-lists in seventy languages, will in the following be referred to as Anceaux' lists. Secondly Myron Bromley generously put at the writer's disposal a number of new wordlists, collected by himself and various other missionaries in the languages of the Lake Plain (Meervlakte) and Van Rees Mountains in north Irian Jaya. These lists were a great help in filling up the gaps in our knowledge of the linguistic situation in those areas. They will be referred to as Bromley's lists. Cognation percentages will as a rule only be given to indicate the estimated degree of genetic relationship between languages in which little or no grammatical information is available. When they are given, they have to be taken as computed for a 100-item basic wordlist,[2] unless stated otherwise.

2.6.2.2. ESTABLISHED TRANS-NEW GUINEA PHYLUM LANGUAGES

2.6.2.2.0.[3] The order in which the languages are surveyed in this part is as follows: 1. the Suki-Gogodala Stock; 2. the Marind Stock; 3. the Yelmek-Maklew (or Bulaka River) sub-phylum-level Family; 4. the Kolopom (or Frederik Hendrik Island) sub-phylum-level Family; 5. the Kayagar stock-level Family; 6. the Central and South New Guinea Stock; 7. the Goliath sub-phylum-level Family; 8. the Dani-Kwerba Stock; 9. the Wissel Lakes-Kemandoga Stock; 10. the Northern (or Tor-Lake Plain) sub-phylum-level Super-Stock; 11. the Senagi sub-phylum-level Family; 12. the Pauwasi Sub-Phylum; 13. the Sentani Stock; 14. the Nimboran sub-phylum-level Family; 15. the Kaure Sub-Phylum; 16. stock and sub-phylum-level Isolates.

2.6.2.2.1. *THE SUKI-GOGODALA STOCK*

2.6.2.2.1.0. The languages of this stock are found in the Lower Fly River area in the Western District of Papua. They are the Suki family-level Isolate, and the Gogodala Family with two member languages, Gogodala and Waruna. The total number of speakers is about 11,500.

2.6.2.2.1.1. The Suki family-level Isolate

Suki is spoken by about 1,000 people living around Suki lagoon, near the southern bank of the Lower Fly River. The language has been studied in detail by members of the Asia Pacific Christian Mission (A.P.C.M.),[4]

but solely for missionary use. Some parts of their work have been published; these are: the Gospels of St Mark and St John, and the Acts (A.P.C.M. 1952a, 1956a). Other published sources are: Papua Annual Report 1919/20 (contains a wordlist of Suki, called 'Nausaku'); Capell 1962 (survey); Voorhoeve 1970b[5] (grammatical notes); and Wurm 1977 (survey).

Suki has been classified as a family-level Isolate within the Suki-Gogodala Stock (Voorhoeve 1970b), but Wurm (1977) is of the opinion that it might possibly belong in one family with Gogodala and Waruna in view of the close structural affinities between Suki and Gogodala. Phonemes: Suki has three voiceless stops: p, t, k [k, kʰ],[6] three voiced stops: b [b, β], d, g [g, ɣ], two nasals: m and n, two sibilants: s [s, ts], and z [z, dz], one liquid: r [ɾ, l], two semivowels: w[w] and y [j], and five vowels: i [i, ɪ, e], e [ɛ, æ], a [a, ɑ], o [o, ɔ], and u [u, ʊ]. There are no phonemic tones; placement of the main stress (ì) is generally (but not always) on the first syllable of a word. Stress could therefore be phonemic, but to date no cases of phonemic stress contrast have been recorded.

Morphological processes are addition (almost exclusively suffixing; some prefixing) and reduplication.

Suffixing occurs mainly with verbs, which can have strings of up to five suffixes following the stem, indicating e.g. causative, person-object, transitive, tense, and person-subject, in this order. Example: wapa-wa-de-m-nat-eru *he will cause them to be dry.* A number of verbs have two different stems depending on the plurality or singularity of the subject: *come,* rugie- (sing. subject), gie- (plur. subject). Interesting are the 'stative' forms, which indicate whether the actor is close by or at a distance from the speaker: u rapritma *he is asleep (over here),* u rapritka *he is asleep (over there).*

Prefixing was found with only two verbs, ti *see,* and ata *give,* which take the object marker before instead of after the verb stem: n-ata *give to me;* d-ata *give to you* (pl.), *give to them;* ata *give to him.*

Information on sentence-medial forms is lacking.

Suffixes also occur with nouns and pronouns, indicating a variety of syntactic relations: object (-k), possessive (-te), instrumental (-gu) and others.

Reduplication seems to be a non-productive process, occurring only with a few nouns to indicate plurality, for example: bùdu *bone,* budùbdu *bones.*

The free pronouns distinguish between 1st, 2nd and 3rd person in singular and plural:

	1	2	3
sing.	ne	a	u
plur.	a	de	i

The 1st person plural and 2nd person singular pronouns are homophonous, but take different possessive suffixes: abane *our;* ate *your.*

The basic word order in the verbal sentence is: subject-object-verb. The indirect object seems free to precede or follow the object, e.g.:

nàat puinamnìtma nè mem kwàin-kabu ète
I(emphatic) *am desiring I this pig's-meat your*

àbi-tibe tìnimatu
father-to to give I want to give this (piece of) pork to your father

which can be rephrased as follows: nàat puinamnìtma ne ète àbi-tibe kwàinkabu tìnimatu.

2.6.2.2.1.2. The Gogodala Family

2.6.2.2.1.2.0. The Gogodala Family has two member languages, Gogodala and Waruna. Gogodala is spoken by approximately 7,000 people living between the Aramia and Lower Fly Rivers. Waruna is spoken by an estimated 3,500 people living west of the Gogodala people near the northern bank of the Fly River. Gogodala has been studied in detail for missionary use by members of the A.P.C.M. and a phonemic statement and a grammar have been prepared by A.K. Neuendorf (undated) but have not been published. Translations of the four Gospels and the Acts have been published by the Bible Society (A.P.C.M. 1952b, 1964, 1965a,b). Capell 1962 contains a short note on the language, and an old wordlist in Gogodala can be found in Riley and Ray 1930. The present writer collected some data in Gogodala, some of which have been published (Voorhoeve 1970b).

The only source of information on Waruna is a wordlist published by Riley (and Ray) (1930-31).

2.6.2.2.1.2.1. *Gogodała*

The phoneme inventory of Gogodala is only slightly different from the one in Suki: it lacks a voiced sibilant, and has three front vowels instead of two. The allophonic ranges are also slightly different. There are three voiceless stops: p, t, k [k, x]; three voiced stops: b, d, g; two nasals: m, n; one sibilant: s [s, ts]; one liquid: l [l,

l̩, r̆, r̩]; two semi-vowels: w, y [j]; and six vowels: i, e, a:[7] [ɛ, æ], a [a, ɑ], o [o, ɔ], and u. There are no tones, and stress is phonemic, as shown by ùmina *buttress* versus umìna *wind*.

Morphological processes are addition (almost exclusively suffixing, and some prefixing, as in Suki) and reduplication.

Verbs can have strings of up to four suffixes following the stem, as in awa-de-mu-nama-lelo *he will call them* in which the sequence is: verb stem - person-object - transitive - tense - subject. Prefixes occur only with the verbs *give*, *tell*, and *kill*, in which they indicate the person-object.

Reduplication of the verb stem occurs in a number of verbs to indicate plurality of object; on the other hand, at least one verb, *give*, has a suppletive stem to indicate this.

A variety of sentence-medial verb forms occurs, expressing amongst others relations of time, purpose and concession between clauses, as well as sameness or non-sameness of subject in the conjoined clauses.

Noun suffixes indicate syntactic relations of possession, instrument, accompaniment, and subject; in addition a small number of nouns has a singularizer suffix which is dropped in the plural. A small number of nouns form plurals by means of reduplication, but most nouns have no separate plural form.

Personal pronouns distinguish three persons in singular and plural:

	1	2	3
sing.	na:	a:	oba
plur.	sa:	da:	obai, ubi

They take suffixes marking possession, accompaniment, and subject.

The basic word order in the verbal sentence is subject-object-verb. However, the order can also be object-subject-verb; in this case the subject has the subject marker -te suffixed to it:

oba dalagi tiliyana *he-man-he saw: he saw the man*
oba dalagi-te tiliyana *him-man-saw: the man saw him.*

A text sample in Gogodala:

àmatabegàla amìna[a] sa:ki ubi-te[b] wa debe-laleyala[c]
long ago girls two they day late afternoon-while it was
ùbi-munu[d] inibìsa ala:là:-te[e] gawa dì-te[e]
their fishing nets took-and canoe climb-and
orò-ma[f] nà:-yana[g]:
lake-to go-they (past tense).
Long ago, on a late afternoon, two girls took their fishing nets, boarded a canoe, and went to the lake.

a) amìna: plural with amìnagi *girl*; b) -te: subject marker; c) debe-laleyala sentence-medial form, 3rd person singular, distant past, indicating that the action expressed by the verb is concurrent with the action expressed by the verb in the next clause, but that the two verbs have different subjects; d) -munu: plural form of the possessive suffix; e) ala:la:-te, di-te: sentence-medial forms indicating that the action expressed by the verb precedes the action expressed by the verb in the next clause, and that the two verbs have the same subject; f) -ma: directional suffix; g) -yana: ending of the 3rd person (singular, dual, or plural), distant past tense.

2.6.2.2.1.2.2. *Waruna*

Wurm (1977) tentatively classifies Waruna as a separate language, closely related to Gogodala; the present writer would rather classify it as a dialect of Gogodala. Since the only source at hand is Riley's wordlist, which contains obvious errors, a definite assessment will have to wait till more data has become available.

2.6.2.2.2. *THE MARIND STOCK*

2.6.2.2.2.0. The Marind Stock stretches over a large part of the lowlands in south-east Irian Jaya, as well as the area around Lake Murray in the Western District of Papua New Guinea. There are three language families in the stock: the Boazi Family, the Marind Family, and the Yaqay Family. Typologically the languages of the Marind Stock contrast with languages of other stocks within the TNGP by two main characteristics: 1. the presence of noun classes which manifest themselves by a concord system based on vowel change; 2. prefixing of most of the verbal affixes including the subject marker. The number of speakers of languages of the Stock is about 21,000.

2.6.2.2.2.1. The Boazi Family

2.2.1.0. The Boazi Family has two member languages, Boazi and Zimakani. Boazi, with a total of almost 2,000 speakers, is spoken in the Western District of Papua New Guinea, between the Irian Jaya border and Lake Murray and also around the northern half of the lake. There are three dialects, South Boazi, North Boazi, and Kuini. The data presented in 2.6.2.2.2.1.2. are in the South Boazi dialect.

Zimakani is spoken between the southern tip of Lake Murray and the confluence of the Fly and the Strickland Rivers. There are two dialects, a northern, Bɛgua, and a southern, Zimakani. The total number of speakers is about 1,500.

An early wordlist in the Boazi language was published in the Papua Annual Report 1921-22; the language near the Roman Catholic Mission station Boset (South Boazi) was studied by the Dutch missionary P. Drabbe who published some notes on its grammar (1954). An English abstract of Drabbe's field notes can be found in Boelaars 1950. The present writer made a survey of the languages of the Lake Murray area, including Boazi (Voorhoeve 1970a). Early wordlists in Zimakani can be found in the Papua Annual Reports of 1916-17 and 1921-22, and a short note on the language (called Dea) can be found in Capell 1962. The survey of the Lake Murray languages mentioned above also included Zimakani. The language has been studied by the A.P.C.M., and parts of the New Testament have been translated in it (A.P.C.M. 1956b, 1966).

2.6.2.2.2.1.1. *Boazi*

Phonemes: Boazi has four voiceless stops: p, t, k, q [ḳ]; three voiced stops: b, d, g; four prenasalized stops: mb, nd, ŋg, ŋq [ŋg̣]; two nasals: m and n; two voiceless and three voiced fricatives: f [f, pf], s [s, ts], v, z [z, dz], and ɣ [ɣ, ɣ̣]; one lateral: l; two semivowels: w, y [j]; and six vowels: i [i, ɪ], e, ɛ [ɛ, æ], a [a, æ, ɑ], o [o, ɔ, ɤ], and u [u, ʊ]. The language is non-tonal; stress seems to be non-phonemic.

Morphological processes include addition (prefixing and suffixing) and internal modification (vowel change).

Verbs can take prefixes marking aspect or mode, subject, and object (in this order) and suffixes marking plural number of subject, durative aspect, and tense (in this order). Some verbs have suppletive roots indicating plurality of subject or object: no-mɛ *I am going,* ɣo-mɛ *you* (sing.)*are going,* z-apet *we are going,* zo-apet *you* (plur.) *are going;* etawam *give (one thing),* ndap *give (many things);* ɣaɣa ma-ta-ɣa-etawam *tobacco* (perfective) aspect-*I-you-give, I have given you the tobacco.*

Sentence-medial forms do occur, e.g. in conditional clauses, but information on this subject is lacking. Indication of identity or non-identity of subject seems to be absent.

Nouns fall into three gender classes which manifest themselves in vowel changes in the possessive post-position gV and the demonstrative pronoun ngVnV (these are the only examples given by Drabbe). V stands

for the vowels e (concord with a masculine singular noun), u (concord with a feminine singular noun), a (concord with a neuter noun, singular or plural) and i (concord with masculine or feminine plural noun). Examples: no ge tat *my father*; no gu ne *my mother*; no gi naqais *my children*; no ɣa ven *my house(s)*. The demonstrative pronoun has the concord forms ŋgene, ŋgunu, ŋgini, and ŋgane. The distinction masculine-feminine is neutralized in the plural. Number is usually not expressed in the noun itself; there is only a small category of nouns which take a pluralizing suffix.

Personal pronouns distinguish three persons in singular and plural, with a masculine-feminine distinction in the 3rd person singular:

	1	2	3
sing.	no	ɣo	ndene/ndunu
plur.	ni	zo	ndini

The three-way gender distinction has here been replaced by a two-way distinction. It is not clear from Drabbe's description how the two-class system relates to the three-class system.

The basic word order in the verbal sentence is subject-object-verb.

2.6.2.2.2.1.2. *Zimakani*

The sound system of Zimakani lacks phonemic back-velar stops (q, ŋq); these occur as allophones of k and ŋg respectively when followed by a or o. Otherwise the sound system is identical to the sound system of Boazi with some minor differences on the allophonic level. Stress seems to be non-phonemic.

The very few verb forms collected by the writer show a structure parallel to Boazi verb structure, with aspect/mode, subject, and object prefixes, in this order. ta-ɣa-tawa *I-you-give, I give it to you* (sing.); noko kagua me-te-o-meanda *I canoe perfect-I-it-looking at, I have been looking at the canoe.*

As in Boazi, nouns fall into three gender classes which manifest themselves in the concord of demonstratives: mɛgu zoŋga-ɛme *this fish*; moagu ato-ɛmo *this woman*; magu kagua *this canoe/these canoes*; miɛgu ato/zoŋga *these women/fish.* These examples also show the singularizing suffix -ɛme (masculine), -ɛmo (feminine) which occurs with a restricted number of animate nouns. The personal pronouns distinguish between three persons in singular and plural. A two-way gender distinction is present in the 3rd person singular:

	1	2	3	
sing.	noko	yoko	ɛɣiɛ	(masc.)
			waɣa	(fem.)
plur.	niki	zoko	yaga	

The corresponding possessive pronouns all have a suffix -mba: nomba, nimba, omba, zomba, ɛɣiɛmba, waɣamba, yagazamba.

The basic word order in the verbal sentence is subject-object-verb, as is shown by the example noko kagua meteomeanda above.

2.6.2.2.2.2. The Marind Family

2.6.2.2.2.2.0. The Marind Family consists of two languages, Marind and Bian Marind. Marind is spoken by about 7,000 people living in the coastal area between Kolopom Island and the Papua New Guinea border. There are four dialects: The Ŋgawir, or Eastern dialect, the Western dialect, the Atih dialect and the Upper Kumbe dialect.[8] Bian Marind is spoken by about 900 people living along the upper Bian River. Marind is the most thoroughly studied language of the Marind Stock. It became initially known through a few short word lists (Ray 1895, Seijne Kok 1908) and a paper by Adriani (1908); the detailed study of the language, begun in the early 20th century was the work of Dutch Roman Catholic missionaries, resulting in publications by Kolk and Vertenten (1922: dictionary), Geurtjens (1926: grammar; 1933: dictionary), Boelaars (1950: grammatical notes), and Drabbe (1955: grammar, texts). They all studied the Ŋgawir dialect, spoken round Merauke, the main government and mission station in the area.

The only published data in Bian Marind are Drabbe's notes on the Bian verbs (1954) and a Bian Marind wordlist which can be found among the comparative lists of Marind dialects in Drabbe 1955, pp.148-51.

2.6.2.2.2.2.1. *Marind*

The Marind sound system contains three voiceless, three voiced, and three prenasalized stops: p, t, k, b, d, g, mb, nd, ŋg; two nasals: m, n; four fricatives: v [v, f], s, z, h; one vibrant: r [ř]; two semivowels: w, y [j]; and five vowels: i, e [e, ɛ], a [a, ɑ], o [o, ɔ], u [u, ʊ]. The language has a pitch-accent which in monomorphemic words is carried by the last syllable. At least one case of phonemic stress contrast has been recorded (Drabbe 1955, p.123).

Morphological processes in Marind are addition (suffixing and prefixing), and internal modification (vowel change).

Verbs can take prefixes as well as suffixes. Prefixed are the markers of subject, indirect object, tense, and some aspects and modes. Suffixed are some aspect and mode markers, object markers, and transitivity markers. Some examples: mend-ano-d-izig perf.-subj.1st pers.sing.-durative-verb stem *I have been sharpening (it)*; m-a-o-og fut.-*I-him-give I shall give it to him*; no-kib-ah-ib *I-turn over-you*-trans.marker (animate object), *I turned you over*; no-kib-an-ib *I turned myself over.*

With a small category of verbs, the object marker is prefixed to the stem, e.g. n-akov *feed me,* h-akov *feed you,* o-akov *feed him.* Verb stems often have separate forms indicating number of subject or object by means of vowel change: *push away with a finger* atetok (singular object), atituk (plural object).

An interesting feature of the verb is that the prefix complex can occur by itself without a verb stem, preceding a personal pronoun, e.g. m-ano nok *I shall be present*; mend-ano-d nok *I was present.*

Nouns fall into four classes which manifest themselves through concord (by means of vowel change) in demonstrative pronouns and some adjectives: *light of weight* akek (masc.sing.) akuk (fem.sing.), akak (neuter I, sing. and plur.), akik (neuter II, and masc./fem.plur.). In a number of nouns, vowel change serves to indicate whether they refer to a male or a female being, or a thing, as well as to distinguish plural from singular forms: anem *male person,* anum *female person,* anim *person*; namakud *animal*, namakid *animals*, namakad *thing, things.*

In the personal pronouns, three persons are distinguished in singular and plural, with a masculine-feminine gender distinction in the 3rd person singular:

	1	2	3
sing.	nok	oh	epe (masc.)
			upe (fem.)
plur.	nok(ke)	eoh	ipe

The third person singular pronoun shows concord with nouns of masculine and feminine gender, but it is not clear from the descriptions whether they refer to nouns of the neuter classes as well.

The word order in the verbal sentence is generally subject-object-verb; but the order subject-verb-object is not uncommon: kivasom upe akiparud oŋgat *girl-she-bound-coconuts, the girl bound (tied together) the coconuts.*

The choice of this order is, according to Drabbe, subject to certain rules, but he does not give further details.

2.6.2.2.2.2. *Bian Marind*

The sound system of Bian Marind seems to be quite similar to the one of Marind; the only differences noted by Drabbe are the presence of a lateral, l, instead of a vibrant r, and of an additional fricative, the voiced velar fricative ɣ.

The same morphological processes as in Marind are found: prefixing, suffixing, and vowel change.

Verbs take prefixes as well as suffixes. Aspect, mode, and some tense markers are suffixed to the verb stem; subject, object, some tense and mode markers, and number markers are prefixed. Some examples:
eben-ɣ-idih *they two-you-see, the two of them saw you.*
ebo-na-Ø-ketad *you-me-*sing.*-follow, you* (sing.) *followed me.*
ebo-na-e-ketad *you-me-*plur.*-follow, you* (plur.) *followed me.*

Verb stems often change for number of subject or object, sometimes by means of derivation, sometimes by stem suppletion, e.g. *smell:* **umatoka** (singular object), **umasuk-mad** (plural object); *stand:* **itala** (singular subject), **lemed** (plural subject), **waɣmat** (dual subject). Note the presence of a dual number which is absent in Marind. A dual number also occurs with the third person subject markers. Sentence-medial forms occur, expressing the following relations between clauses: a) irreal condition; b) "thwarted desire" (e.g. *I wanted to ..., but he...*).

The personal pronouns are:

	1	2	3
sing.	nok	oɣ	anep, anup
plur.	nokke	eoɣ	anip

They lack the dual number distinction present in the verbal system. Examples of sentences are not available.

2.6.2.2.2.3. The Yaqay Family

2.6.2.2.2.3.0. The Yaqay Family has two member languages, Yaqay, and Warkai-Bipim, sharing about 30% cognates. Yaqay is spoken by about 9,000 people in the Mapi (Mappi) River area, north of the delta of the Digul River. There are two dialects; one is spoken on the Mapi and Qobàmarao Rivers, the other on the Mambeòmön, Màburamara, and Bapai Rivers. Warkai-Bipim is spoken by a few hundred people living in two

small villages, Warkai and Bipim, near the southern border of the Asmat language area. It is separated from Yaqay by languages of the Awyu and Kayagar Families (see section 2.6.2.2.5. and 2.6.2.2.6.2. below).

The Mapi River dialect of Yaqay was studied by Drabbe, who published his grammatical notes (1954); an English abstract of his field notes can be found in Boelaars 1950. The present writer collected wordlists in Warkai and Bipim and published some notes on the Warkai-Bipim language (Voorhoeve 1971).

2.6.2.2.2.3.1. *Yaqay*

The sound system of Yaqay seems to contain the following phonemes: four voiceless stops: p [p, p^{Φ}, Φ] t [t, t^{h}, ts], k, q [ķ, $ķ^{x}$, $x̣$] (only preceding a and o); three voiced stops: b, d, g; three nasals: m, n, ŋ; one vibrant or flap r [ř]; two semi-vowels: w, y [j]; and seven vowels: i, é [$e^{\check{}}$, e, ɪ], e [ɛ], a [a, ɑ], o [o, ɔ], u, and ö [ə̧]. Drabbe describes stress in Yaqay as a kind of pitch accent; he does not indicate whether it is phonemic or not.

The morphological processes are the same as in Marind: prefixing, suffixing, and internal modification.

Verbs: the markers of subject, indirect object, tense, and some mode markers are prefixed to the stem; the markers of habitual action and irrealis are suffixed. Some examples:
oko-r-ponokon subject-tense-verb stem *I give (it)*;
nana-aqa-ene-ponokon tense-subject-ind.object-verb stem *You will give (it) to us.*

With many verbs, the number of the subject or object is indicated by a derivative suffix; others have suppletive stems: **omadaq/omadaka-mak** *to be full* (with singular and plural subject respectively); **pitik/pitiki-mak** *to hold* (with singular and plural object respectively); **tak** *to go* (singular subject), **eedek** *to go* (plural subject).

In addition, some verbs have suppletive stems which indicate animate or inanimate object: **boamek, boamuk, boamok** *to make,* with singular object masc., fem., and neuter; **beandidi** *to make,* plural object, animate; **boondodo** *to make* (inanimate object, plural).

Irrealis forms are the only sentence medial forms mentioned by Drabbe: **arep apindok-emaq,** ... *if he had been sitting here,* .... Nouns fall into three gender classes, masculine, feminine, and neuter, manifesting themselves through concord, by means of vowel change, in verbs, pronouns, adjectives, adverbs, and 'connectives'. In a number of cases, vowel change serves to distinguish between nouns belonging to different

classes, e.g. nekem *husband*, nukum *wife*.

The personal pronouns are:

	1	2	3
sing.	anok	aq	arep, arup, arop
plur.	indok	aeok	arip

There is no information on verbal affixes marking the direct object, nor on word order in the verbal sentence.

2.6.2.2.2.3.2. *Warkai-Bipim*

Tentatively the following phonemes could be identified in Warkai-Bipim: p, t, k [k, k̟, g, g̟], ʔ, b, d; f [p^{f}, f], s [ts, s], x [x, x̟, ɣ, ɣ̟], h; w, y [j, j̆], r [ř]; i, e [e, ĕ], ɛ [ɛ, æ], u [u, ü], o [o, ɔ], a [a, ɑ], and perhaps ə. The wordlists do not reveal any grammatical information.

2.6.2.2.3. *THE YELMEK-MAKLEW SUB-PHYLUM-LEVEL FAMILY*[9]

2.6.2.2.3.0. The Family consists of two languages, Yelmek and Maklew, spoken on the mainland opposite Kolopom (Frederik Hendrik) Island. Yelmek occupies the western half of the language area, Maklew the eastern; this language borders in the east on Marind.

Yelmek is spoken in two slightly different dialects. In 1950, the language was spoken by about 350 people, Maklew by little more than 100.[10] The two languages have been studied by Drabbe who published short notes on them (1950b); an English abstract of these can be found in Boelaars 1950.

2.6.2.2.3.1. Yelmek

Yelmek has the following consonants and vowels: p, t, k, b, d, g, m, n, ŋ, w, y, l; i, e, è [ɛ], a, o, u, ö [ɵ̞], and ü. The inventory is only tentative, based on a very short description containing little phonetic detail. Suprasegmentals: stress; details are not available. Verbs: the majority of verbs take person and tense suffixes. In many verb forms these suffixes are portmanteau morphemes indicating both person and tense. Only in the past tense it is possible to discern a sequence of tense marker + person marker. Examples: *break a rope*, present tense: 1st pers.sing. me-me, 2nd pers.plur. me-ga; past tense: 1st pers.sing. me-p-ma, 2nd pers.sing. me-p-we.

A few verbs take a prefix as well as a suffix. In the future tense forms these can be analysed as a tense prefix and a person suffix; in the other tenses (present, past), the two affixes act as an indivisible unit in the marking of tense and person. Examples: li *to ask for*, future tense: 1st pers.sing. alika, 2nd pers.sing. ali, 1st pers.plur. alipa, 2nd pers.plur. aligo; past tense: 1st pers.sing. wolipma, 2nd pers.sing. ŋölipua, 3rd pers.sing. walipu, 1st pers.plur. wolipu, 2nd pers.plur. wolipua, 3rd pers.plur. ŋalipu.

There is no information on object marking and on sentence medial forms.

Nouns do not seem to take any affixes.

With the personal pronouns, three persons are distinguished in singular and plural. There are two series; pronouns of the first function as subject, those of the second as object or indirect object. They are:

	I				II		
	1	2	3		1	2	3
sing.	ŋöl	aw	ew	sing.	ŋölel	awol	ebi
plur.	ŋag	el	em	plur.	ŋagol	elel	emi

A parallel division into two series is also found with the possessive pronouns which are derived from the forms in series I above by suffixing -awk (1st series) or -awki (2nd series).

In verbal sentences the object is reported to generally precede the verb, but occasionally to follow it. No examples are available.

2.6.2.2.3.2. Maklew

As in Yelmek, the phoneme inventory can only be given tentatively. The following consonants and vowels have been listed: p, t, k, b, d, g, m, n, ŋ, f, s, h, w, y, l; i, e, è [ɛ], a, o, u, ö [ə̯], ü. Suprasegmentals: stress; no details are available.

Verbs: verbs take prefixes and/or suffixes to mark person, number (singular, plural, and dual in all persons, in all tenses except the near past which lacks the dual-plural distinction), gender (masculine, feminine in the 3rd person singular in all tenses), tense (present, near past, far past, future), aspect (momentaneous, continuative) and mode (imperative).

The structure of the verbal affix complexes is in many cases unclear. However, where specific affixes are identifiable, it appears that subject markers follow the verb stem and tense/aspect and mode markers

precede it. A few verbs have object markers; these are prefixed directly to the verb stem, examples: ep-pös-oma (tense-VS-subject) *I jump*; bema-pös-ka (idem) *I shall jump*; beba-n-ha-p (tense-object-VS-subject) *he will see me*; ya-pös (mode-Vs) *jump!*

Nouns: there is evidence of a two-gender system which manifests itself in the subject markers with the verb (see above). The only nominal affixes mentioned by Drabbe are found with kinship terms in possessive constructions: awaŋ/alaŋ ŋima-he *your* (sing.,plur.) *father*; ibaŋ/imlaŋ ŋima-be *his/their father*; ŋölaŋ/ŋagaŋ ŋima *my/our father*.

As in Yelmek the pronouns fall into two groups according to their function as subject or non-subject, but there is no parallel division in the possessive pronouns. The personal pronouns are:

	I			II		
	1	2	3	1	2	3
sing.	ŋöllo	obe	ib	ŋölel	awol	ibel
plur.	ŋag	omle	imel	ŋagol	alel	imlel

Regarding word order in the verbal sentence, the same is reported for Maklew as for Yelmek: in general the object precedes the verb, but occasionally the reverse order does occur.

2.6.2.2.4. *THE KOLOPOM (OR FREDERIK HENDRIK) ISLAND SUB-PHYLUM-LEVEL FAMILY*

2.6.2.2.4.0. The languages of this family are spoken on Kolopom Island, separated from the mainland by the Marianne Strait which is at its narrowest less than a mile wide. There are three member languages, Kimaghana, Riantana, and Ndom. Kimaghama is spoken by about 2,000 people living in the eastern and southern half of the island. This language has at least two dialects. Riantana is spoken by about 1,000 people in the north and north-west of the island, and Ndom, west of Riantana, has only about 300 speakers.

Typologically the three languages contrast with almost all other languages of the TNGP by their near-complete lack of verb morphology.

The only published data in Kimaghama, Riantana, and Ndom are the notes collected by Drabbe (1949), an English abstract of which appeared in Boelaars 1950.

2.6.2.2.4.1. Kimaghama

The following tentative phoneme inventory can be given on the basis of Drabbe's notes: p, t, k, tj [č], b, d, g, dj [ǰ], m, n, ŋ, v [ɓ], gh [ɣ], r, w, y; i, é [ɪ, e], e [ɛ], a [ɑ, a, æ], o [o, ɔ], u, ö. Suprasegmentals: stress, the occurrence of which seems unpredictable. (Stress is therefore potentially phonemic, but no cases of phonemic stress contrast have been recorded.)

Verbs do not take any affixes. Tense (present, past, future), aspect (progressive, perfective), and the habitual mode are indicated by separate markers which generally follow the verb. The imperative marker precedes the verb, and tense markers precede it in question sentences containing a question word.

The only morphological process in the language apart from compounding is reduplication which occurs with verbs when they are followed by a prohibitive or habitual-action marker, and otherwise to express a repetitive action: awra *hit once,* awrawra *hit several times;* avu *see,* avavu de *see regularly, habitually* (a similar construction is found in the Iha language, see 2.6.2.3.3.1.1.).

There are two series of personal pronouns; those of the first series function as subject, those of the second series as (indirect) object. The pronouns are:

	I				II		
	1	2	3		1	2	3
sing.	no	uŋgu	nö	sing.	nie	aŋga	anda
plur.	ni	iŋgi	ii	plur.	nire	aŋge	andé

Word order in the verbal sentence is subject-object-verb, e.g. nö nie awra aghatj (*he-me-beat*-future): *he will beat me.*

2.6.2.2.4.2. Riantana

The phoneme inventory of Riantana is almost the same as the one of Kimaghama. There is no velar fricative among the consonants, and the only difference in the vowels is the phonetic quality of ö which in Riantana is a rounded central vowel [ə̹]. Suprasegmentals: as in Kimaghama.

The only morphological process in the language, apart from compounding, is reduplication which occurs with verbs when they are preceded by the prohibitive mode marker. As in Kimaghama, tense (present, near past, past, future) and mode are indicated by separate markers some of

which precede and some of which follow the verb.

Personal pronouns again fall into a subject and a non-subject series:

	I			II		
	1	2	3	1	2	3
sing.	na(r)	ŋgö(r)	yo(n)	nee	ŋgee	enta
plur.	ni(r)	ntjö(r)	yakwo	niee	ntjiee	yakwota

(The forms with final r or n in series I occur when the pronoun precedes a word with an initial vowel.)

The basic word order in the verbal sentence is subject-object-verb.

2.6.2.2.4.3. Ndom

Drabbe lists the following consonants and vowels: t, k, b, d, g, m, n, f, th ([θ] or [t͡ʰ] this is not clear from Drabbe's description), s, gh [x, ɣ], w, y, r; i, é [ɪ, e], e [ɛ], a [ɑ, a, æ], o [o, ɔ], u, ö [ʉ]. Suprasegmentals: the main stress is generally on the word-final syllable. Details are not available.

Ndom is the only one of the three languages which has affixation as a morphological process, but it occurs only with some personal pronouns, a few verbs, and the free tense markers. Nouns do not take affixes.

Most verbs do not take affixes, but *come* and *go* have prefixed tense markers: aman *came* (past), gh-aman *came* (near past), ghasr-aman *come* (present), ntagh-aman *come* (future). The same prefixes occur with the free tense markers. There are three series of these, and the verbs fall into three classes according to the series of tense markers with which they combine. The present tense marker in series I has two forms, distinguishing 1st person from non-1st person:

Series I: atön (past), gh-atön (near past), ghasr-ate (present, 1st p.), ghat-ete (present, 2nd, 3rd p.), ntagh-atön (future). e.g. tom atön *steal*-past, *stole*.

Series II: aten, gh-aten, asraghatere, ntagh-aten;

Series III: ran, gh-ran, ghasr-eraré, ntagha-ran.

The basic word order in the verbal sentence is subject-object-verb.

2.6.2.2.5. *THE KAYAGAR STOCK-LEVEL FAMILY*

2.6.2.2.5.0. To the north-west of the Yaqay language, in the basins of the Gondu and Cook Rivers, three languages are found which together constitute the Kayagar Family. They are, from west to east: Kaugat, with about 700 speakers, Kaygir with approximately 3,000 speakers, and

Tamagário with some 3,500 speakers. Kaugat and Tamagário are both spoken in two dialects; the dialect situation in Kaygir is not known. Tamagário and Kaygir are closely related languages, sharing over 70% of basic vocabulary. Both share about 55% basic vocabulary with Kaugat.

The only published materials in these languages are some notes by the present writer (Voorhoeve 1971), collected during a fieldtrip in 1970. Manuscripts of short grammars of Kaygir and Tamagário are in the possession of the Catholic Mission in the area.

2.6.2.2.5.1. Tamagário

The sound system of Tamagário contains the following consonants and vowels: p [p, b],[11] t [t, d, ts, s], k [k, g, kx, x, ɣ] (all these are backed when contiguous to a, o, or u); m [m, b], n [n, d]; w, y, r [ř, ř]; i [i, ɪ], e [e, ɛ], a [a, æ, ɑ], o [o, ɔ], u [u, ʊ], and perhaps ə. The language is non-tonal; in bisyllabic words the final syllable is stressed.

Tamagário is a suffixing language; other morphological processes have not come to the attention of the present writer.

Nouns do not seem to take any suffixes.

Pronouns: personal pronouns appear in three series. Those of the first series function as subject in nominal sentences, and with intransitive verbs, and as object with transitive verbs. They are:

	1	2	3
sing.	nak	ak	ek
plur.	nep	akanek	wep

Those of the second series are absolute forms: nak-ar *it's me* etc; and they also function as subject with transitive verbs. Those of the third series function as indirect object: nak-ere etc.

Verbs take suffixes; they vary for tense, mood, aspect, person and number. There are five tenses: present, recent past (today's past), past (yesterday and earlier), distant past, and future. The aspects are punctiliar and durative-repetitive. The order of the suffixes is aspect-tense-person/number. A suffix marking plurality of actor occurs only in the punctiliar forms of some verbs. Otherwise number is not indicated (as in the 2nd and 3rd person).

Examples: urok parm- *to talk*, urok parm-o-m-e (verb root-durative aspect-present tense-1st person) *I am/we are talking*; kere-m-e *I hit it* (present tense punctiliar), kere-aka-m-e *we hit it* (present tense punctiliar, with plural suffix -aka).

There are sentence-medial forms indicating that the action expressed by the verb is to be followed by another action. They vary for identity and non-identity of subject. The sentence-medial forms are compounds in which the second constituent is a form of the verb *to cease*: verb root + tem (identity of subject)/verb root + tema/temariki (non-identity of subject).

The basic word order in a verbal sentence is subject-object-verb.

2.6.2.2.5.2. Kaygir

Kaygir has the following consonants and vowel phonemes: p [p, b], t [t, d], k [k, g], f [pf, f], s [ts, s], x [kx, x, ɣ] (these allophones are backed when contiguous to a, o, or u), m [m, b], n [n, d], w, y, r [r̃, ř]; i, e, a, o, u, with the same allophonic range as in Tamagário, and perhaps ə. In bi-syllabic words the final syllable is stressed.

The pronoun system is very similar to the system of Tamagário; the three series seem to have the same functions. The personal pronouns of series I are:

	1	2	3
sing.	nax	ax	ekam
plur.	nep	axam	ene

Series II and III are derived from I by the adding of the suffixes -are and -eru respectively.

Further grammatical information is lacking.

2.6.2.2.5.3. Kaugat

The sound system of Kaugat contains the following consonants and vowels: p [p, b], t [t, d], k [k, g], c [č], ʔ, m [m, b], n [n, d], f [pf, f], s [ts, s], x [kx, x, ɣ] (these are backed when contiguous to a, o, or u), w, y, r [r̃, ř]; i [i, ɪ], e [e, ɛ], ü, ö, [ö, ə̈], u [u, ʊ], o [o, ɔ], and a [a, æ, ɑ]. In bi-syllabic words the final syllable is stressed.

The following personal pronouns have been noted:

	1	2	Absolute forms:	1	2
sing.	naxa	axa		naʔar	aʔar
plur.	nipi	a'ani		nipir	aʔaner

Some examples of verbal sentences (the few verb forms noted do not allow a complete analysis of the suffix complexes with the verb):

ay sep-maxame *father is walking*
ay maʔam owp-taxame *father ate the sago*
naxa maʔam owp-taxap *I ate the sago.*

They show the word order subject-object-verb.

2.6.2.2.6. *THE CENTRAL AND SOUTH NEW GUINEA STOCK*

2.6.2.2.6.0. The Central and South New Guinea Stock is one of the largest stocks of the Trans-New Guinea Phylum: it stretches from the eastern part of the Bomberai Peninsula in the west over the greater part of the southern lowlands of Irian Jaya into the northern half of the Western District of Papua New Guinea and into the mountain ranges on both sides of the international border. The stock consists of eight language families. They are: the Asmat-Kamoro Family, the Awyu Family, the Ok Family, the Awin-Pa Family, the East Strickland Family, the Bosavi Family, the Duna-Bogaya Family, and the Mombum Family.

The Central and South New Guinea Stock had its origin as one of the stocks of the Central and South New Guinea Phylum, proposed by Voorhoeve (1968). The stock originally also included a few language groups which since have been reclassified as separate stocks: the Trans-Fly, Suki-Gogodala, and Marind Stocks (Wurm 1971, late 1969 supplement).

The total number of speakers of languages of the stock is estimated at 158,000.

2.6.2.2.6.1. The Asmat-Kamoro Family

2.6.2.2.6.1.0. The family has five member languages: Iria, Asienara, Kamoro, Sempan, and Asmat; Iria and Asienara share nearly 80% cognates, the other percentages within the family range from 50% to 70%. There is no clear subgrouping; Iria and Asienara seem to be somewhat closer related to Asmat than to Kamoro. The total number of speakers in the family is perhaps near 52,000.

2.6.2.2.6.1.1. *Iria and Asienara*

Iria and Asienara are spoken by a total of about 1,600 people living in the eastern plain of the Bomberai Peninsula and on both sides of the southern half of Kamrau Bay. The two languages are very closely related and when more data come to hand they may well turn out to be dialects of one language. A few general notes on them have been published by Anceaux (1958); they contain a detailed survey of the dialects and the villages where they are spoken. Language materials are restricted to the lexical data in Anceaux' lists.

The phoneme inventory, as far as it could be ascertained from the wordlists, is: six stops: p, t, k (Asienara) or ʔ (Iria), b, d, g; two nasals: m, and n; two, possibly three fricatives: s, h or f, and perhaps v; one vibrant, r; two semi-vowels, w, and y; five or perhaps six vowels: i, e, a, o, u, (ə).

The pronouns are:

	1	2	3
sing.	noa	oroa	ara
plur.	na	eria	ʔ[12]

They correspond closely to the pronouns in the other languages of the family. Further grammatical information is at present not available.

2.6.2.2.6.1.2. *Kamoro*

Kamoro is spoken around Yamur Lake in the 'neck' of the Bird's Head and along about 300 kilometers of the south coast, from Etna Bay to the Mukumuga River. Drabbe (1953) gives 7,000-8,000 as the estimated number of Kamoro speakers, but this figure does not include the speakers around Etna Bay and Yamur Lake. At present an estimate of 9,000 speakers may be nearer to the mark.

In the plains Drabbe distinguishes six dialects: Western (450 speakers), Tarya (500 speakers), Central (4,300 speakers), Kamora (400 speakers), Wania (1,300 speakers), and Mukumuga (800 speakers). In the western tip of the language area, around Etna Bay and Yamur Lake, at least one more dialect is spoken. The earliest wordlist in the language which was also the second vocabulary of a Papuan language to be recorded, dates from 1828 (Modera 1830). Between this date and 1912 when Ray published his comparative notes on the "Aŋgadi-Mimika' group of languages, several wordlists compiled by early explorers were published (for details see chapter 2.1.2. in this volume). The detailed study of the language was begun in the late thirties by P. Drabbe who published a collection of folk tales (1947-50) and a grammar (1953).[13] His unpublished manuscripts include a Kamoro-Dutch dictionary and some grammatical notes on the Mukumuga dialect. Capell (1962) contains some notes on Kamoro sentence and verb structure, based on Drabbe's work.

Kamoro has a very simple sound system. It has only three stops, p, t, k [k, g, x] or ʔ (Kamora dialect); two nasals m [m, m^b], n [n, n^d]; one vibrant r; two semi-vowels, w, and y; and five, perhaps six, vowel phonemes: i, e [e, ɛ], a, o [o, ɔ], u, (ə). Stress is indicated by Drabbe on individual words, but no rules of stress placement are given.

Morphological processes are prefixing and suffixing, and compounding which in this language is not restricted to nouns, but occurs with verbs as well, leading to the formation of polymorphemic verb stems of a very complex structure.

Verbs take prefixes as well as suffixes. Suffixes indicate mode or aspect, tense, object, and subject, in this order. The function of the prefixes is much less clear; sometimes they seem to form discontinuous morphemes with tense suffixes, sometimes they seem to indicate aspect, or mode, or mark a verb form as negative or sentence-medial (as in the case of conditional and unreal-condition forms). Examples: a-neker-aymi-n-umu pref.-verb stem-future-*you*(sing.)-*we(two): the two of us will carry you;* kapaki aka-naak-ako-m-ore, apa-kem-ako-ma-n-em *tobacco* pref.-verb stem-mode-tense-persons, pref.-verb stem-mode-tense-object-subject: *if there were (any) tobacco, you would give me it!* A special feature of verb stems is their often very complex morphological structure. This structure will not be described here since it is very similar to the verb stem structure in Asmat, which will be described in some detail in the next section. Some Kamoro examples can be found in Capell 1962.

Nouns: Drabbe mentions three derivational processes by which nouns are derived from nouns (by suffixing -tya), or verb stems (by prefixing ma-, and suffixing -tya, or -kae): atiri *thigh,* àtiri-tya *trousers;* wonao *ascend,* ma-wonaoa-tya *ladder;* utu-mari-m *fall-float*-causative: *cause to fall over and float,* ma-utumarim-kae *driftwood.*

Personal pronouns: 1st, 2nd, and 3rd person singular and plural are distinguished; in addition there is one dual form indicating non-first person:[14]

	1	2	3
sing.	noro	oro	are
plur.	nare	kare	are
dual		kimane	

Drabbe further mentions a series of 'genitive', 'dative', and 'accusative' forms: nòatya, nàatya, oratya, kàatya, àratya, *my* etc.; noma, nama, oma, kama, ama *to me* etc.; noa, nàa, oa, kàa, a *me* (obj.) etc. The 'genitive' series corresponds to the Asmat forms nor-as *my-thing, mine* etc.; the 'dative' series most probably is a series of emphatic forms, as in Asmat (see 2.6.2.2.6.1.4.).

The basic word order in the verbal sentence is subject-object-verb, e.g. kaoka ereka makeàamena *woman-fish-she gives it to you: the woman gives the fish to you.*

2.6.2.2.6.1.3. *Sempan*

Sempan is spoken by about 1,000 people living on the Otakwa, Inawka, and Omawka Rivers east of the Kamoro area. Drabbe (1953) presents some notes on the Sempan verb system, compared with Kamoro. A Sempan word-list of 378 items can be found in appendix III of Drabbe 1953. Drabbe also compiled a Sempan-Dutch dictionary which has not been published.

The only difference between the Kamoro and Sempan sound systems is the presence of two fricatives in Sempan: h or s, and f, which are lacking in Kamoro.

The verb takes prefixes and suffixes. Suffixes mark tense or mode, object, subject, in this order. A habitual aspect marker is prefixed; the functions of the other prefixes are not clear. Examples: ma-tafo-mà-n-i pref.-verb stem-tense-obj.-subj.: *I am beating you*; ma-tafo-fi-n-i *I beat you* (past), ma-tafo-n-i *I just beat you* (near past); a-tafo-rama-n-i *I shall beat you*; ahama-tafu-n-i *I usually/habitually beat him.*

The personal pronouns are:

	1	2	3
sing.	noro	oro	aro
plur.	naro	taro	aro

Dual forms are entirely lacking. However, the person-number suffixes of the verb distinguish between three persons in singular, plural and dual.

2.6.2.2.6.1.4. *Asmat*

The Asmat language area begins about 60 kilometers west of Sempan, where the Jac River forms its western boundary. Between the Jac and the Sirac (Eilanden) River, Asmat occupies almost the whole coastal plain. Its eastern and southern border runs roughly parallel with the Sirac at a distance of 30-40 kilometers east and south from it. Only near and along the coast has the language area an extension further south: in a gradually narrowing strip it extends as far as the northern entrance of the Digul River. Drabbe distinguishes five main dialects within Asmat: a Northern dialect on the upper Lorentz and Noord Rivers; a Central-Coast dialect; a Southern or Casuarina Coast dialect; a Central dialect on the lower Sirac and As (Kampong) Rivers; and the Citak dialect east of the confluence of the Wildeman and Sirac Rivers. This is a very global division, still in need of much refinement. The total number of Asmat speakers is estimated at 40,000.

An early wordlist of Asmat can be found in Drabbe 1953, Appendix III. Later Drabbe made a detailed study of the language, mainly of the Central-Coast dialect, and published a grammar and dictionary (1959b, c), and a comparative study of three of the dialects (1963). The present writer studied the Flamingo Bay sub-dialect of the Central-Coast dialect, and published a phonology, morphology, and texts (Voorhoeve 1965). The Central-Coast and Casuarina Coast dialects are being studied by missionaries of the Evangelical Alliance Mission, but the results of their work are not published. The following notes are based on the writer's own description of the language.

The sound system of Asmat contains eleven consonant and six vowel phonemes: p [p, pʷ], t, k [k, ḳ, x], c [č, tʸ], m [m, mb, b], n [n, nd, d], f, s [s, š, θ], r [ř, r̃], w, y [j, ǰ]; i [i, ü, ɪ], e [e, ɛ, ö], a [a, ɑ, æ], o [o, ɔ, ɤ], u [u, ʉ], and ə. The language is non-tonal and has a stress system of alternating stressed and unstressed syllables.

Morphological processes in Asmat are addition (prefixing, infixing, suffixing), internal modification, (re)duplication, and compounding. Of these, infixing and modification (vowel change) are non-productive processes, restricted to only a few verb roots. Verbs take suffixes and prefixes; a few verb roots also take infixes. Suffixes mark aspect or mode, tense, question, object, and subject, generally in this order. Prefixes express a variety of aspects and modes (prioritive, completive, explicative, prohibitive, interrogative, requisitive) and tense (postponed, or non-immediate imperative). Examples: por *see*; a-por-kom *you* (plur.) *saw it*, eme-por-kom *you already saw it*; tepa-por-kom *why didn't you see it?* a-por-n-okom *you saw me*; a-por-ane-n-okom *did you see me?*; a-por-m-okom *you* (plur.) *see it.*

Reduplication, marking repetitive aspect, is found with verb roots: erem *to tear*, ererem *tear to pieces.*

Asmat shares with Kamoro and Sempan the possibility of the forming of verb stems of considerable morphological complexity. A verb stem can consist of several roots, or one or more roots plus a number of formatives expressing voice (benefactive, causative, transitive), mode (tentative), or aspect (completive, comitative). Some examples: yik *tie up*, yik-tam *tie up for someone*, yik-tam-por *try to tie up for someone.* Compounding, reduplication and suffixing are all present in the following stem: si-si-m-ka-kami-m-tiw *to wash ashore many objects* (si-m = root si plus transitivizer m: *to push something*; sisim *to push repeatedly*; in the same way, kakamim means *to deposit repeatedly*; tiw indicates that the object belongs to the *lying* class of objects.

Nouns take derivative suffixes forming diminutives; a few kinship nouns take a pluralizer suffix.

The personal pronouns are:

	1	2	3
sing.	no/nor	o/or	} a/ar
plur.	na/nar	ca/car	

The forms with -r are absolute or emphatic forms. The pronouns take a number of derivative suffixes indicating such relations as exclusion, opposition and inclusion, as in: norpa *I only*; norma *I myself*, nam, noram *I too*. In their underived form the pronouns also function as possessive pronouns: no cem *my house*; nor amas *my sago*.

As in Sempan, dual number is not expressed in the pronouns; in the verb system dual number is expressed only in archaic forms used in formal story telling.

The basic word order in the verbal sentence is subject-object-verb: yiwi yisin kokomtawmes *the children are picking coconuts*.

2.6.2.2.6.2. The Awyu-Dumut Family

The languages of this family occupy an area of irregular shape, filling up the gap between the Asmat-Kamoro Family in the west, the Kayagar and Marind Stocks in the south, and the Ok Family in the east. The northern border of the family has not yet been determined with certainty, but it runs probably near the foothills of the central ranges. At present there are three known sub-families: 1) the Sawuy sub-family-level Isolate, 2) the Awyu Sub-Family with three, possibly four, member languages: Syiagha-Yenimu, Pisa, Aghu, and Airo-Sumagaghe (?), 3) the Dumut Sub-Family with three member languages: Kaeti, Wambon, and Wanggom. One more language, Kotogüt, also seems to belong to the family but its affiliation to the sub-families is not known. The total number of speakers in the three sub-families is estimated at 20,500. To this number have to be added an estimated 8,000-9,000 speakers of as yet unidentified Awyu languages living in 44 villages in the area separating the Pisa and Syiagha-Yenimu languages from Aghu and Kotogüt. An early classification of the Awyu-Dumut languages as a family was presented by Voorhoeve (1968). Healey, in his study of the proto-Awyu-Dumut phonology (1970) established the infra-structure of the group, to which Sawuy was later added by Voorhoeve (1971).

Although the cognation percentages between the languages of the family do not exceed 66% (Healey, 1970) their grammatical structure is very similar, as will become clear in the following survey.

2.6.2.2.6.2.1. *Sawuy*

The Sawuy language is spoken by an estimated 2,000 people living on the middle and upper Ayip River, the upper Fayit River, and on the middle Kronkel River. The language borders in the west and north on Asmat, and in the south on Kaugat, of the Kayagar Stock. There are at least two dialects, the Ayip River dialect and the Fayit-Kronkel River dialect. The only published data in the language are the wordlist and grammatical notes collected by the present writer (Voorhoeve 1971).

The consonant and vowel phonemes of Sawuy are: p, t, k [k, ḳ], b [b, β], g [g, g̣], d, f [pf, f], s [^{t}s, s, z], x [^{k}x, x, x̣, ɣ], m, n [n, ŋ, ~],[15] r [l, ř, r̃], w, y [j]; i [i, ɪ], e [e, ɛ], a [ɑ, a, æ], o [o, ɔ], and u. Suprasegmentals: the last syllable of a word usually carries the main stress. However, there is a possibility that the language is at least marginally tonal.

The few verb forms collected show that tense, voice, and person markers are suffixed to the stem. They show formal similarities to corresponding verb forms in Syiagha.

The following pronouns have been noted:

	1	2	3
sing.	nogo/nogop	go, gop	e, ep
plur.	nigi/nigip	gi	-

The change from back to front vowel to indicate plural seems to be an old feature, common to many languages in the TNGP, but which was lost in the other Awyu languages, as we shall see below.

2.6.2.2.6.2.2. *Syiagha-Yenimu*

Syiagha-Yenimu is spoken by approximately 3,000 people living on the Syiagha and Yenimu Rivers, north of the Digul River near its delta and immediately south of the Digul River in the same area, where the language is known as Oser. There are two dialects, Syiagha, and Yenimu. The data presented below represent the Syiagha dialect. A short Oser wordlist was published by Nevermann (1939). Drabbe (1950a) published a grammatical sketch of Syiagha-Yenimu, including a wordlist of 408 items.

The only difference between the sound systems of Syiagha-Yenimu and Sawuy is the probable presence of a sixth vowel, ɛ, in Syiagha-Yenimu. Minor differences on the allophonic level may exist, but the very global phonetic description by Drabbe does not allow to go into details. Suprasegmentals: stress, but no rules of stress placement have been given.

The only morphological processes described in the language, apart from the usual compounding of nouns, are suffixing and (re)duplication, which seem to be restricted to verbs. Verbs take tense and person/number suffixes, in this order, but in some tenses the whole ending acts as an undivisible whole. Other suffixes denote voice (imperative) and voice/person/number (optative). Some verbs have suppletive stems indicating singularity and plurality of subject or object, e.g. **kund-** *to die* (sing. subj.), **xorisi** *to die* (plur. subj.) Reduplication or duplication of verb stems marks the verb as repetitive or expressing a habitual action. (In bi- and tri-syllabic stems it is the second syllable which is repeated: **rafumid-** *to close*; **rafufumid** *to close repeatedly*).

There are two 'participial' forms, expressing that the action is either simultaneous with or followed by another action by the same actor. They are the only sentence-medial verbs reported for this language. One form is used in the present and past tenses, the other in the future tense. With subject markers in the verb, distinction is made between first and non-first person in singular and plural; with the personal pronouns however, three persons are distinguished in singular and plural. The personal pronouns are:

	1	2	3
sing.	no	go	ewe, ege
plur.	noxo	goxo	yoxo

There is a separate series of possessive pronouns, **na, naxa; ga, gaxa; wa, yaxa.**

The basic word order in the verbal sentence is subject-object-verb.

2.6.2.2.6.2.3. *Pisa*

Pisa is spoken by about 3,500 people living on the small tributaries of the Wildeman and Kampong Rivers. The only published source of information on the language are grammatical notes by Drabbe (1950a) to which he added a wordlist of 408 items.

The Pisa sound system is nearly identical to the sound systems of Syiagha-Yenimu and Sawuy: p, t, k, b, d, g, f [^{p}f, f, v],[16] s [^{t}s, s], x [x, ɣ, h], m, n [n, ŋ], r [ř], w, y; i [i, ɪ], e, ɛ, a [a, æ], o [o, ʏ, ɔ], u, ü. The main difference is in the vowel system. Suprasegmentals: stress; no rules of stress placement have been given.

Morphological processes recorded in Pisa are prefixing, suffixing, reduplication and duplication.

Verbs take suffixes marking tense, person/number, mode, and aspect. Tense markers precede subject markers except in the near-past forms in which the order is reversed. Prefixes are: a future tense marker which occurs with many but not all verbs, and an imperative marker, also of restricted occurrence.

There is only one sentence-medial verb, a 'participial' form which indicates simultaneity of action as well as identity of subject. Some verbs have suppletive stems indicating singularity and plurality of subject or object, e.g. ra-/kirimo- *to take* with singular and plural object respectively. Reduplication or duplication of the verb stem marks the action as repetitive.

By the addition of a derivative suffix to the verb stem verbal nouns are formed which indicate the instrument with which, or the place where, an action is performed. A few nouns, i.e. a few kinship terms, can take a pluralizer suffix; some nouns have a plural which is formed by duplication, but most nouns do not vary for number.

Three persons are distinguished in the pronouns in singular and plural in contrast to the subject markers with the verbs with which only 1st and non-1st person are distinguished in singular and plural. There are two series of pronouns:

	I			II		
	1	2	3	1	2	3
sing.	nu	gu	eki	na	ga	ena/ewa
plur.	nugu	gugu	yoxo	nuna	guna	yoxona

The forms of series I function as subject; those of series II function as object, indirect object, and as possessive pronouns.

The basic word order in the verbal sentence is subject-object-verb.

2.6.2.2.6.2.4. *Aghu*

Aghu (or Axu) is spoken by perhaps 3,000 people living between the Digul and Mappi Rivers, west and south of the township Tanah Merah. A grammar of Axu, and some texts have been published by Drabbe (1957).

The sound system is very similar to the sound systems of Syiagha-Yenimu and Pisa; the main differences are the absence of phonemic r and of a third unrounded front vowel. Axu also has a rounded front vowel ü, like Pisa. The phonemes are: p, t, k, b, d [d, ř], g, f, s [s, š], x [x, ɣ], m, n [n, ŋ, ˜] (see note 15), w, y; a, e, ɛ, i, o, u, and ü. Supra-segmentals: weak stress on the last syllable of monomorphemic words; otherwise no rules of stress placement have been given in the source.

Morphological processes in the language are suffixing, prefixing, reduplication and duplication.

Verbs take suffixes marking tense, aspect, mode, person, and number (or sometimes person-number in one). Tense, person, number, and aspect or mode markers can follow each other in this order.

Prefixes mark future or past tense with some verbs, and imperative. As in the other languages of the Awyu sub-family, only first and non-first person are distinguished by different subject markers in singular and plural. Some verbs have two suppletive stems, one occurring in the present and past tense, the other in the future tense, and some modes. Examples: da- *hear*: da-k-enã (verb stem-tense-person/number) *you* (plur.)/*they heard it*; da-dia-nã *you*(plur.)/*they will hear it*. da- *go*, future stem ad-: ad-oã (verb stem-person/number) *let us go*; ad-oan-ɛ *we shall go*.

Reduplication or duplication of the verb stem serves to mark repetitive aspect; another way in which repetitive action is marked is by the combining of the verb stem with a repetitive-aspect marking formative.

There are sentence-medial forms indicating simultaneous action and identity of subject (they vary for tense but not for person-number); and consecutive action and identity or non-identity of subject. Some of these vary for tense and person-number, others vary only for tense.
Nouns: a few nouns have plural forms, either through reduplication (axaxu *men* from axu *man*) or through duplication (pesopeso *many wounds*).

The pronouns, also very similar to those in Pisa and Syiagha-Yenimu, are:

	1	2	3
sing.	nu	gu	ege
plur.	nügu	gügu	yoxo

They function as subject, object, and indirect object; the 1st and 2nd person plural and the 3rd person singular and plural pronouns also function as possessive pronouns. In the 1st and 2nd person singular separate possessive pronouns occur: na, ga.

The basic word order in the verbal sentence is subject-object-verb.

2.6.2.2.6.2.5. *Airo-Sumagaxe*

This language is reported to be spoken by about 2,000 people living on the Peru River, north of the Kayagar languages. The only source, giving location and village names, is Simmons et al. 1967. To date no language data have become available.

2.6.2.2.6.2.6. *Wambon*

Wambon is spoken by approximately 1,000 people living on the headwaters of the Mandobo River as far north as Mount Koreom. A grammatical sketch of the language, containing some texts, has been published by Drabbe (1959d).

The phonemes in Wambon are: p [p, p̂], t [t, t̂], k [k, g, k̂], b [mb], d [nd], g [ŋg], m, n, ŋ, s [s, h], r, w, y; i, e [ɛ, ɛ̂], a, o, u. Suprasegmentals: weak stress on the final syllable of monomorphemic words; otherwise no rules of stress placement have been given.

Morphological processes in Wambon are suffixing, reduplication and duplication.

Verbs take suffixes marking tense, mode, person and number; tense or mode suffixes usually precede person and number suffixes. Examples: tami-w-an-in verb root: *make a canoe*-1st pers.-plur.-fut.: *we shall make a canoe*; ba-ken-ew-an verb root: *sit*-present-tense-1st pers.-plur.: *we are sitting*. As in other languages of the family, only first and non-first person are distinguished by different subject suffixes.

There are a few sentence-medial forms, indicating simultaneous and consecutive action as well as identity of subject or part-identity of subject (i.e. if the subject of the following verb includes the subject of the first verb). They do not vary for tense, person or number.

Repetitive action is marked by reduplication or duplication of the verb stem and the suffixing of -mo: roko, rorokomo *say repeatedly*; ri, ririmo *cut down repeatedly*.

Nouns: only a few kinship terms take a pluralizing suffix; some other nouns have duplicated forms indicating plural: kagupkagup *men*, but most nouns have no number marking.

With the personal pronouns, three persons are distinguished in singular and plural; there are several series: I absolute forms, II subject forms, III non-subject forms, IV, V emphatic forms. Only series I-III are given below.

	I			II		
	1	2	3	1	2	3
sing.	nup	gup	yup	ne	ge	ye
plur.	nagup	gagup	yagup	nage	gage	yage

III: The forms of series I less the final p: nu, etc.

Possessive pronouns are: na(n), ga(n), ya(n), nago(n), gago(n), yago(n). The forms with final n occur when the possessed noun, which follows the possessive pronoun, has an initial vowel.

The basic word order in the verbal sentence is subject-object-verb, as in kakuwe taket yokonin *the men gave kauri shells*.

2.6.2.2.6.2.7. *Kaeti*

Kaeti is spoken by approximately 4,000 people living in the basin of the Mandobo River. There are two dialects, Kambom on the lower Mandobo and Ruŋgwanyap on the middle Mandobo. A small group of about 200 Kaeti speakers is now living on the east bank of the Fly River, north of Lake Murray; they call themselves Kwem.

Drabbe (1959d) published texts with explanatory notes in Kaeti.

The sound system of Kaeti is similar to the sound system of Wambon; it lacks a velar nasal (ŋ), and has two additional vowel phonemes, ü and ö.

It is difficult to get a clear picture of the grammatical structure of Kaeti from Drabbe's notes. It seems that it is very similar to the grammatical structure of Wambon, so much so that one would expect Kaeti to be a dialect of Wambon rather than a separate language. For these reasons no survey of its grammatical features will be given.

2.6.2.2.6.2.8. *Waŋgom*

Waŋgom is spoken by possibly 1,000 people living between the Digul River and Mt Koreom. The language probably belongs to the Dumut sub-family. There are no data available in this language. Its location and affiliation are indicated by Drabbe (1959d, p.5).

2.6.2.2.6.2.9. *Kotogüt*

This language is spoken north of Mt Koreom by over 1,000 people. Its location is mentioned by Drabbe (1959d, p.5) but its affiliation to the sub-families of Awyu-Dumut is not known.[17]

2.6.2.2.6.3. The Ok Family

2.6.2.2.6.3.0. The territory of the Ok Family stretches over a large part of the central mountain ranges on both sides of the Indonesian-Papua New Guinea border, and has a long narrow extension into the southern lowlands, also straddling the border. The total number of speakers

of the languages of the family is about 52,000.

The Ok Family is divided into two sub-families: Lowland Ok, with the member languages Southern Kati, Northern Kati, Yoŋgom, Niŋgerum, and Iwur, and Mountain Ok with the member languages Telefol, Tifal, Kauwol, Faiwol, Setaman, Bimin, Mianmin, Wagarabai, and Ngalum. The family was established by A. Healey whose Ph.D. thesis includes a detailed survey of the languages of the Ok Family, a comparative study of the main phonological and grammatical features of these languages, and a reconstruction of a large number of proto-Ok words (Healey 1964b).

The linguistic situation as it is known today differs from the one described by Healey in only a few minor details. These will be mentioned in their appropriate place in this section.

The following survey is based on Healey's work, supplemented by data in Yoŋgom, Niŋgirum, Faiwol and Ngalum collected by the present writer. It unavoidably lacks a lot of the detail found in Healey's thesis, and those interested will have to turn to that work for further information.

2.6.2.2.6.3.1. *Southern Kati*

Southern Kati is spoken by approximately 4,000 people living on the lower Muyu River in Irian Jaya. The language was studied by Drabbe who called it the Metomka dialect of Kati. He published a contrastive grammar of southern and northern Kati in the series Micro-Bibliotheca Anthropos (Drabbe 1954). To this grammar he added 420-item wordlists which were later also added to his study of Kaeti and Wambon (1959d). An early wordlist from Southern Kati, called 'Digoeleesch', can be found in Geurtjens 1933.

The sound system contains the following consonant and vowel phonemes: p [p, p̌, b], t [t, t̆, d], k [k, k̆, g], b [mb, b], d [nd, d, r], m, n, ŋ, w, y [j, ǰ, š, ž]; i, e [ɪ, e, ɛ], a, o [ɔ], u [ʊ, u]. b occurs only word-initially; [r] is the word-medial allophone of /d/. Suprasegmentals: in monomorphemic words the stress occurs on the last syllable, in compounds on the last syllable of the first constituent; stress is probably non-phonemic. However, Healey (1964b, p.61) does not want to exclude the possibility that pitch is phonemic.

Morphological processes are suffixing, prefixing, and duplication.

Verbs generally take only suffixes; only a few verbs take a prefixed object marker. With the majority of verbs the stem is followed by an object or indirect object marker (if any), a tense, aspect or mode marker (if any) and a subject marker. Markers of perfective aspect and optative mode follow the subject marker. Subject and tense are sometimes indicated by a portmanteau morpheme. There are sentence medial verbs indicating

that the action is followed by another action by the same actor; they vary for person-number and tense. Other sentence-medial verbs ('participial' forms in Drabbe) indicate that the action is simultaneous with another action by the same actor; they vary only for tense.
Verb stems: a few verbs have suppletive stems, indicating singularity and plurality of object. Others have a derived stem if the object is plural. One verb, *to beat*, has a zero stem.
Nouns: they show two gender classes which manifest themselves in the concord of personal pronouns, and of subject and object affixes of verbs. Duplication of nouns occurs occasionally to indicate plural number.
Pronouns: with the personal pronouns three persons are distinguished in singular and plural, there is a two-gender distinction in the first and second person singular. They are:

	1	2	3
sing.	ne	ep (masc.)	ye (masc.)
		kup (fem.)	yu (fem.)
plur.	nup	kip	yi

(With the subject suffixes of the verbs, only first and non-first person are distinguished in the plural, and gender is only marked in the 3rd person singular.)

The basic word order in the verbal sentence is subject-object-verb.

2.6.2.2.6.3.2. *Northern Kati*

Northern Kati (Drabbe's Niinati dialect of Kati) is spoken by about 8,000 people living on the upper Muyu River. There are several dialects but detailed information is not at hand. Information on the grammar and phonology, and a 420-item wordlist can be found in Drabbe 1954, already mentioned above in 2.6.3.1. The wordlist was also included in Drabbe 1959d. Schoorl (1957)[18] published a list of 160 anthropological terms in Northern Kati.

The phonological and grammatical structures of Southern and Northern Kati are very similar. Phonologically there are only minor differences on the allophonic level. Grammatically the main difference is the occurrence of sentence-medial verbs which indicate identity or non-identity of subject. (This is indicated only for the first and third person singular and only when the following verb is in the future tense.) A minor difference occurs in the form of the second person pronouns; they all have initial t: tep, tup, tip.

The basic word order in the verbal sentence is again subject-object-verb.

2.6.2.2.6.3.3. *Yoŋgom*

Yoŋgom is spoken along the Fly and Tedi (Alice) Rivers as well as in two villages on the northern shore of Lake Murray. The number of speakers is estimated to be slightly more than 2,000. The only published materials in Yoŋgom are three wordlists compiled by Leo Austen, two of which appeared in the Papua Annual Report 1921/22 and one in the Papua Annual Report 1924/25. The present writer collected a wordlist at Lake Murray. The language seems to be very similar to Southern and Northern Kati, and may even turn out to be a dialect of one of the two. Healey (1964b) reports a fair degree of mutual intelligibility between Yoŋgom and Northern Kati, and similar information was obtained by the present writer regarding Yoŋgom and Southern Kati.

At present only a tentative list of phonemes, and three pronouns can be given. The phonemes are: p [p, Φ, b, β̞], t [t̪, t], k [k, k̟, x, ɣ], d [ɖ, ɾ̆, l], m, n, ŋ, w [w, β], y [j, j̆, ʝ]; i, e [e, ɛ], a [a, æ], o [o, ɔ], and u. The language seems to have contrastive pitch (Healey 1964, p. 61).

The pronouns are: ne *I*, nup *we* and e *you(r)*.

2.6.2.2.6.3.4. *Iwur*

Iwur is spoken on the south side of the central ranges in the valley of the Iwur River and eastwards almost to the Ok Denom. The only indication of its affiliation are a few remarks in Brongersma and Venema[19] to the effect that Muyu (Northern Kati) is understood by the Iwur ("Katem") but not the language of the Sibil valley (Ngalum). This would place Iwur in the Lowland Ok sub-family. Healey (1964b) gives as his impression that the number of speakers is unlikely to exceed 1,000. There are no language data available.

2.6.2.2.6.3.5. *Niŋgirum*

Niŋgirum is spoken between the Ok Birim and the Ok Tedi (Alice River); its western neighbour is Northern Kati, its northern neighbours are Iwur, Kauwol and Tifal, and its western and southern neighbours are Faiwol, Awin, and Yoŋgom. The largest part of the language area is on the eastern side of the Indonesian-Papua New Guinean border. The language has three dialects, from south to north: Niŋgirum proper, Kasuwa, and Daupka

(this last dialect was tentatively classified as a separate language, Upper Tedi, by Healey (1964b) but later information obtained by the present writer shows that it is a dialect of Niŋgirum). The total number of speakers of Niŋgirum is about 4,000; approximately 1,000 of these live in Irian Jaya.

The only published material in Niŋgirum to date is a short wordlist in the Daupka dialect compiled by Leo Austen (Papua Annual Report 1925/26, p.75). Healey had at his disposal a short grammar and some wordlists; the present writer collected three wordlists, all in the Niŋgirum dialect.

The sound system of Niŋgirum contains the following consonant and vowel phonemes: p [p, b, β, ^{m}b], t [t, ṭ, t^{h}, ṭ^{h}, s], k [k, k^{h}, k^{x}, x, ɣ, g], d [d, ḍ, ř, ṛ̌], g [g, ^{ŋ}g], m, n [n, ṇ], ŋ [ŋ, ŋ^{y}], w [β], y, h; i [i, ɪ], e [e, ɛ], a [a, ɑ], o [o, ɔ, ɒ], u [u, ʊ]. Stops are unreleased in word-final position; vowels are sometimes nasalized if they are contiguous to a nasal consonant or h.

Suprasegmentals: a primary stress seems to occur always on the last syllable of a word. No cases of contrastive pitch have been reported.

Verbs take suffixes as well as prefixes; of these only the suffixed subject markers have been identified. They show the same semantic distinctions as in the other Lowland Ok languages: 1st, 2nd, 3rd person singular, with a feminine-masculine distinction in the 3rd person; first and non-first person plural.

Nouns fall into two gender classes, manifested (at least) by masculine and feminine forms of the 2nd and 3rd person singular pronouns.
Personal pronouns: in addition to the gender distinction in the 2nd and 3rd person singular there is a distinction between inclusive and exclusive in the 1st person plural. This is a feature not shared by the other Ok languages. The pronouns are:

	1	2	3
sing.	ne	kep (masc.)	de (masc.)
		kup (fem.)	du (fem.)
plur.	ni (incl.)	dip	di
	nip (excl.)		

The basic word order in the verbal sentence is subject-object-verb.

2.6.2.2.6.3.6. *Telefol*

Telefol is spoken by about 4,000 people living on the headwaters of the Sepik, around the government station Telefomin, and on the headwaters of the Nina River, north of the station. There are two main dialects, the Feramin dialect and the Telefolmin dialect.

The language is the most thoroughly studied of the Ok languages; A. and P.M. Healey of the Summer Institute of Linguistics worked for more than five years in the area. They completed a phonological and morphological analysis, did significant work in the syntactical analysis of the language, and compiled a dictionary. Their publications are A. Healey 1962, 1964a, 1964b; P.M. Healey 1964, 1965a, b, c, 1966.

The consonant and vowel phonemes in Telefol are: b [b, β, p], d, t [t, t^h], k [k, k^h, ɣ], k^w, m, n, ŋ, s, f [Φ, f], l [ɾ, l]; a [a, ʌ], e [e, ɛ], i [i, ɪ], o [o, ɔ], u [u, ʊ].

Suprasegmentals: Telefol is a tonal language; its tonal system has been described in terms of two step tonemes: up, and down, occurring alone and in combination.

Morphological processes are suffixing, prefixing and duplication. Verbs: indirect object or object, tense or aspect, negation, and subject are indicated by suffixes in this order. Some verbs take object prefixes. With the object prefixes a distinction is made between 1st person singular, 2nd person singular, 3rd person singular masculine and feminine, and plural; the subject suffixes show one additional distinction, i.e. between 1st person plural and 2nd/3rd person plural. The object/indirect object suffixes show only three distinctions: 1st person singular, 2nd person singular, versus all others. Most verbs have one punctiliar stem and one continuative stem; the continuative stem is mostly marked by an aspect suffix, but some verbs have suppletive stems.

There is a variety of medial verbs, expressing sameness or non-sameness of subject, and different temporal and logical relationships between the clauses.

Nouns fall into two gender classes, manifested by concord of personal pronouns, and of the subject and object affixes of the verb. A few kinship terms take a pluralizer suffix; with other nouns occasionally duplication occurs to mark plurality.

The personal pronouns show a distinction between three persons in singular and plural, with an additional gender distinction in the 2nd and 3rd person singular. In Telefol, personal pronouns are bound forms which never occur without a suffix. The majority of these suffixes are syntactic markers of one kind or another. The pronoun roots all have an emphatic and a non-emphatic form; they are:

	1		2		3	
	non-emph.	emph.	non-emph.	emph.	non-emph.	emph.
sing.	na-, ni-	nala-	kab-	kalab- (masc.)	i-	ila- (masc.)
			kub-	kulub- (fem.)	o-, u-	ulu- (fem.)
plur.	no-, nu-	nulu-	ib-	ilib-	i-	ili-

The basic word order in the verbal sentence is subject-object-verb.

2.6.2.2.6.3.7. *Tifal*

Tifal is spoken by over 2,500 people living in the valley of the Ilam River west of Telefomin, on the southern tributaries of the upper Sepik River, and on the headwaters of the Ok Tedi south of the main watershed. There are at least three main dialects: Tifalmin-Urapmin, Atbalmin, and Wopkeimin. The language is being studied by members of the Summer Institute of Linguistics. Published sources of information on Tifal are Healey 1964b, Steinkrauss 1969, and P. Healey and Steinkrauss 1972.

The sound systems of Tifal and Telefol differ only on the allophonic level (except the Wopkeimin dialect which lacks k^w, but has g, not present in Telefol). Tifal is also a tonal language; it has two register tones, high, and low.

Morphologically the two languages are also very similar and therefore no details will be given. The pronoun roots are: na-/nila-; nu-/(?); kab-/kaltab-; kub-/kultub-; ib-/(?); a-/ala-; u-/ulu-; i-/ili-.

The basic word order in the verbal sentence is subject-object-verb.

2.6.2.2.6.3.8. *Kauwol*

Kauwol is spoken by an estimated 500 people living in the upper Kauwol valley on both sides of the Indonesian-Papua New Guinean border. The only published source of information on Kauwol is Healey 1964b.

The sound system shows only allophonic differences with the phonemic system of Telefol. The language has contrastive pitch, but no analysis of the tonemic system has been undertaken. Grammatical data are not available.

2.6.2.2.6.3.9. *Faiwol*

Faiwol is spoken in a number of dialects by the people living on the headwaters of the Fly River (Wok Feneŋ), the Palmer River (Wok Luap), and the Murray River. The total number of speakers may exceed 3,000. Faiwol is being studied by members of the Summer Institute of Linguistics. To date the only source of information on the language is Healey 1964b.

The only difference between the phonemic systems of Faiwol and Telefol on the phonemic level is the presence in Faiwol of a voiced velar stop g. The language has contrastive lexical pitch.

Morphologically Faiwol is very similar to Telefol, and therefore no details will be given. The pronoun roots are: na-, nu-, kab-, kub-, ib-, u-, a-, i-; only two emphatic forms have been noted, nala-, and nulu-.

The basic word order in the verbal sentence is subject-object-verb.

2.6.2.2.6.3.10. *Setaman*

Setaman is spoken by a small group of people living on the upper reaches of the Palmer River. Its status as a separate language has yet to be confirmed. The only source of information on the language is Healey 1964b.

2.6.2.2.6.3.11. *Bimin*

This language is spoken by an estimated 1,000 people in the valley of the Woŋgop River, a tributary of the Strickland River. The only published source of information on the language is Healey 1964b. The consonant and vowel phonemes are: b, t [t, t^h], r [d, ř, l], g, k [k, k^h, h, ɣ], kw, gw, m, n, ŋ, w, y, f, s; i, e, a, o, u. The language has contrastive pitch.

Morphologically Bimin is very similar to Telefol, and therefore no details will be given.

Most of the personal pronouns are free forms:

	1	2	3
sing.	ne	kab-, koo- (masc.)	e
		ku, koo- (fem.)	u
plur.	nuu	yuu, yoo-	i

The basic word order in the verbal sentence is subject-object-verb.

2.6.2.2.6.3.12. *Mianmin*

Mianmin is spoken by about 1,500 people living on the headwaters of the August and May Rivers north of Tifal and Telefol. Published sources of information on the language are Healey 1964b, and Smith and Weston 1974a, 1974b.

The phonemic system contains the following consonants and vowels: p [b, p], t [t, t^h], k [k, k^h, ɣ], r [d, l, ř], g, kw, gw, m, n, ŋ, f, h, s, w, y; i, e, a, o, u, ã. There seem to be three contrastive pitch patterns: high, low-falling, and low-rising.

Morphologically Mianmin is very similar to Telefol; therefore no details will be given.

The pronoun roots are: ne-/nere-; ni-/niri-; kep-/kerep-, op-/orop-; ip-/irip-; e-/ere-; o-/oro-; i-/iri-.

The basic word order in the verbal sentence is subject-object-verb.

2.6.2.2.6.3.13. *Wagarabai*

Wagarabai is spoken on the Wagarabai River, a tributary of the August River, north-west of Mianmin. The estimated number of speakers is 500 or more. Healey 1964b is the only published source of data on the language.

The phonemic system contains the following consonants and vowels: p [p, b], t, k, d, l, m, n, ŋ, f, s, h, w, y; i, e, a, o, u. The language has contrastive pitch.

Verbs have punctiliar and continuative stems as in Telefol. Further grammatical data are not available.

2.6.2.2.6.3.14. *Ngalum*

Ngalum is spoken in and around the valley of the Nangul River in Irian Jaya, and also on the headwaters of the Ok Sibil, Ok Bon, and the Sobger River. There are several dialects, but detailed information is not available. The number of speakers is estimated at 18,000. The only published sources of information on Ngalum are Healey 1964b and a translation of the four Gospels in the Apmi Sibil dialect by the Catholic Mission (Roman Catholic Mission 1970).

The present writer collected a wordlist and some grammatical notes in the Apmi Sibil dialect.

Tentatively the follcwing phonemes can be set up: p, t [t, ṭ], k [k, ķ, k^x, $ķ^x$], b, d [d, ď], g [g^w], m, ɲ, ŋ, f [^{p}f], s [^{t}s, s], l [l, ļ], w, y; i, e [e, ɛ], a, o [ɔ, o], u.

The language is reported to have contrastive pitch.

The grammatical structure seems to be similar to the structure of Telefol, but no details can be given.

2.6.2.2.6.4. The Awin-Pa Family

2.6.2.2.6.4.0. Between the Strickland River in the east, and the Yoŋgom and Niŋgirum languages in the west the Awin-Pa Family is found. The family has only two member languages, Awin and Pa, with a total of about 7,500 speakers.

Awin-Pa was tentatively identified as a family by Healey (1964b); his classification was later confirmed by the present writer, who collected lexical data and grammatical notes in these languages (Voorhoeve 1968).

Both Awin and Pa are being studied by members of the A.P.C.M., but the results of their work have not been published.

2.6.2.2.6.4.1. *Awin*

Awin, or Ækyom as it is locally called, is spoken by an estimated 6,000 people living in an area stretching east from the Ok Tedi across the Fly River into the hilly country north of the Elevala River. In the north the language borders on Faiwol. The easternmost Awin speaking people known today are those of the Minumin tribe living on the Upper Palmer River (Wok Luap) and Black River. There are perhaps three main dialects in Awin, roughly covering the western, central-northern, and eastern part of the language area. Details of the dialect situation are not yet available. The data presented below represent Awin as spoken between Kiunga and Rumginae, in the south-west of the area.

A preliminary analysis of the phonemic system of Awin yielded the following tentative list of phonemes: pʰ, tʰ, kʰ, p, t, k, b [b, β], d, g [g, ᵑg], m, n, (ŋ), s [ᵗs, s], h, r [ř], w, y; i, e, ɛ [ɛ, æ], a [a, ɑ], o [ɔ, o], u [u, ʊ], (ü). There is some evidence that the language has contrastive pitch.

Verbs take only suffixes. They do not vary for person, only for number (singular versus plural), and tense, mode, or aspect. Number and tense, mode or aspect are mostly expressed by one portmanteau suffix. Some examples: *sit* pʰ-; present tense, singular pʰra, plural pʰrae; future singular pʰi, plural pʰrɛki; perfective singular pʰɛrɛ, plural pʰɛri, desiderative singular pʰɛra, plural pʰuɛra. There are sentence-medial verbs indicating a temporal relationship between two clauses (simultaneous or consecutive action), or a conditional relationship between them.

Nouns do not vary for number; there are no noun classes.

The personal pronouns are:

	1	2	3
sing.	no	gu	yo
plur.	küo	guo	ka
dual	ki	gi	?

A 3rd person dual form was not obtained, but there is no certainty that it does not exist in the language.

The corresponding dependent and independent forms of the possessive pronouns are:

	1	2	3
sing.	na, nana	goa, goana	ya, yana
plur.	kua, kuana	gua, guana	ka, kana
dual	kia, kiana	gia, giana	?

The basic word order in the verbal sentence is subject-object-verb. Some examples: ɛme da hmin k-ra *(mother sago cooking is-doing): mother is cooking the sago*; n-ae ya mina soae butmen de *(my-father his pig sweet potato all ate): my father's pig ate all the sweet potatoes.*

2.6.2.2.6.4.2. *Pa*

Pa (also known as Pare) is spoken by about 1,500 people living between the Elevala River and Lake Murray, west of the Strickland River. There seem to be five slightly different dialects, but considerable population movements since the establishment of Mission and Government have blurred the dialect boundaries.

In a preliminary analysis of the sound system the following phonemes have been tentatively identified: p, t, k, b [b, β], d [^{n}d, d], g [g, ɣ], (f [p$^{\Phi}$, Φ]), s [^{t}s, s], h, m, n, (ŋ), r [ř], w, y; i [i, ɪ], e [e, e˅], ɛ [ɛ, æ], a [a, ɑ], ɔ [ɒ, ɔ], o [o, ɤ], u [u, ʉ], (ə). Five of the eight vowels also occur nasalized, but the phonemic status of the nasalized vowels is still uncertain.

There is some evidence that the language has contrastive pitch, possibly a high and a low tone.

Verbs take suffixes indicating tense, aspect or mode, and number. Some examples: *eat,* present tense sg/pl da/dɛgɔ; recent past sg/pl di/dɔgɔ; intended action sg/pl dika/dakɛ; habitual action in the past sg/pl dima/dimawi; habitual action in the present sg/pl dɛnia/dɛnĩə.

The only clearly sentence-medial verbs noted are conditional forms.

Nouns do not vary for number; there seem to be no noun classes.

The following personal pronouns have been noted:

	1	2
sing.	nɔ, nõ	go
plur.	neke	geke
dual	ni(gi)	gi

They show the same semantic distinctions as the pronouns in Awin.

The pronouns in this series function as subject; object/indirect object pronouns are formed by suffixing -ã: nõã, nekã, nigã, goã, gekã, giã; possessive pronouns have the same form when in attributive position; when in predicative position, a suffix -rɛ is added to them: nõãrɛ *(it's) mine,* a nõãrɛ *it is my house.*

The basic word order in the verbal sentence is subject-object-verb. One example: pɛ ni mũřɛ̃ mɛ nàsi mɛ dagɔ *(tomorrow we fish and rice and shall eat): Tomorrow we shall eat fish and rice.*

2.6.2.2.6.5. The East Strickland Family

2.6.2.2.6.5.0. The family extends over an area of approximately 150 kilometers from north to south and 30 kilometers from west to east, mainly on the eastern side of the Strickland River. There are three member languages, Nomad, Agala, and Konai, with a total of about 3,500 speakers. The family was first classified as a member of the Central and South New Guinea Stock by the present writer (Voorhoeve 1968), who collected lexical and grammatical data in several dialects of the Nomad language. The only other published sources of information on these languages are the classificatory study by R.D. Shaw (Shaw 1973) and some grammatical notes by K. Shaw (Shaw, K. 1973), both in Franklin, ed. 1973. That volume contains also comparative wordlists in several Nomad dialects, and Agala (App.D).

2.6.2.2.6.5.1. *Nomad*

The Nomad language consists of four clearly separate dialects:

a) Kubo (± 1,000 speakers), spoken from the Carrington River in the north to the middle Nomad River in the south;
b) Samo (± 650 speakers), spoken directly east of the Strickland River between the Cecilia River and the Lower Nomad and Rentoul Rivers;
c) Honibu (± 700 speakers) living in an undetermined area south of the Lower Nomad and Rentoul Rivers;
d) Bibo (± 400 speakers) spoken between the Nomad and Rentoul Rivers.

The data presented here are in the Samo dialect.

The sound system contains the following consonant and vowel phonemes: t, k, b, d, g, m, l [n, l, ř], f [Φ], s, h, w, y; i, e [e, ɛ], a [a, ɑ], ɔ, o, u. All vowels have nasalized counterparts; nasalization is phonemic. There is some evidence that the language has contrastive pitch.

Verbs take suffixes indicating voice (causative), number (action as a group, with a restricted number of verbs), tense, mood, and aspect. Some examples: huga- *come;* huga-la *will come,* huga-bɔ *came,* huga-ye *come!,* dugɔ̃ mũ-di-la *(clothes wear*-causative-*will) will cause to wear clothes.*

There are a number of dependent (sentence-medial) verbs, indicating simultaneous action, condition and unreal condition; in the first case there is also distinction between same and different subject.

Personal pronouns: there are two series of pronouns; those of series I occur as subject or object, those of series II occur only as subject. Three persons are distinguished in singular, dual, and plural, and there is an exclusive-inclusive distinction in the 1st person dual.

	I			II		
	1	2	3	1	2	3
sing.	ã	nɔ̃	yɔ̃	ã	nã	yẽ
plur.	ɔi	nĩ	yã/diyɔ̃	ɔye	nĩye	diyẽ
dual	oli (excl.)	nĩli	ili	oliye (excl.)	nĩle	ile
	ala (incl.)			ala (incl.)		

The possessive pronouns are identical with the pronouns of series II, except for the singular forms. These are: mɔ, nẽ, and ẽ. They precede the possessed noun.

The usual word order in the verbal sentence is subject-object-verb; but the order object-subject-verb can occur if the object is in focus. Example: yẽ bɔi nã-bɔ *he ate the snake;* yɔ̃ bɔi nã-bɔ *the pig ate him/it.*

2.6.2.2.6.5.2. *Agala*

Agala is spoken by perhaps 300 people living on the upper reaches of the Burnett and Liddle Rivers. The only material available in this language is a short wordlist (unpublished) which shows that it is fairly closely related to Nomad. The pronouns found in this list are: *I* ame, *you* (sing.) name, *we* (plur.) abe, *we two* da, *you two* nele, *they two* ele.

2.6.2.2.6.5.3. *Konai*

Konai (or Kanai) is spoken by about 400 people living on both banks of the Strickland River and on the lower Murray River. The language is closely related to Agala.

2.6.2.2.6.6. The Bosavi Family

2.6.2.2.6.6.0. The Bosavi Family extends from the eastern border of the East Strickland Family eastwards to the edge of the Southern Highlands and southwards as far as the headwaters of the Wawoi and Bamu Rivers on the southern slopes of Mount Bosavi. There are five languages in the family: Beami, Onabasulu, Kaluli, Kasua, and Kware. The total number of speakers is perhaps about 6,500.

The only published source of information on these languages is Franklin (ed.) 1973, which contains Shaw's survey of the Bosavi languages (Chapter 5) (R. Shaw 1973) and a hundred-item wordlist of Beami in Appendix D. The present writer collected lexical data and some grammatical notes in Beami.

2.6.2.2.6.6.1. *Beami*

Beami (or Bedamini) is spoken by an estimated 4,000 people living on the Papuan Plateau east of the Nomad language area. There are two main dialects, Beami and Etoro; the latter is spoken on the southern slopes of Mount Sisa. Details of the dialect situation are not yet available.

A preliminary phonemic analysis has led to the tentative identification of the following consonant and vowel phonemes: b [p, b, β], d [t, d], g [k, g], m, n, f [f, v], s [s, z], h, r [r̆, l̆], w, y; i, e [e, ɛ], æ (ʔ), a [a, ɑ], o [ɔ, o], u [u, ü]. All vowels also occur nasalized. The language is probably tonal.

Verbs take suffixes indicating tense, mode, and aspect; person and number are not expressed by verb suffixes. Only a few of the verb suffixes have been identified, e.g. -ma imperative: i-ma *give!*; -i past tense: habe-i *broke*; -be progressive: ahuã-be *walking*. Some dependent verbs have been noted; e.g. verbs with -ri: gagu- *hold*, gagu-ri ma- *(holding-come) bring*; firi-ri ma- *(leaving behind-come) come without*.

There is a category of verbal nouns, marked by a suffix -su: gora- *sleep*, gora-su *sleeping place*.

The personal pronouns distinguish between three persons in singular, plural and dual:

	1	2	3
sing.	na	di	ya
plur.	nini	diri	iri
dual	ani	ari	ere

In verbal sentences, the object precedes the verbs but it can either follow or precede the subject:

ani kai gobe-ra mosu-nu *(we two banana roast-to go-shall) we two shall go to roast the bananas.*

gasida wida na bæ-i *(yesterday cassowary I see-*past tense*) yesterday I saw a cassowary.*

2.6.2.2.6.6.2. *Onabasulu*

Onabasulu is spoken by about 300 people living midway between Mount Sisa and Mount Bosavi. Except for a short wordlist which shows that the language belongs in one family with Beami no data are available.

2.6.2.2.6.6.3. *Kaluli*

Kaluli is spoken by approximately 1,500 people living on the northern slopes of Mount Bosavi. The language has been studied by W.M. Rule of the A.P.C.M. who wrote a short grammar (Rule 1964).

The phonemic system has the following consonant and vowel phonemes: t [tʰ], k [kʰ], b [b, p], d [t, d], g [k, g, ɣ], f, s [ʂ], h, m, n, l [l̆, l̥], w, y; i, e, ɛ [æ], a, ɔ, o, u. All vowels also occur nasalized; nasalization is phonemic.

Kaluli is a tonal language with three tones, high, mid, and low.

Verbs take suffixes indicating person (first versus non-first person), tense, mode, or aspect. Combinations of suffixes do not seem to occur; person and tense or mode are expressed by portmanteau morphemes. Examples: dolo-ma! *sharpen it!*, dolo-mɛnɔ *I/we shall sharpen it;* dolo-mɛib *you/he/they will sharpen it;* dolo-man *sharpen habitually.* There are dependent verbs expressing simultaneous or consecutive action, purpose, condition, and reason.

Personal pronouns have two forms: a focussed form and a non-focussed form. The focussed forms function only as subject, the non-focussed forms function as subject and as object. The two series are:

	non-focussed:			focussed:		
	1	2	3	1	2	3
sing.	ne	go	e	nisa	gisa	esa
plur.	niyɔ	giyɔ	ɛnɔ	niliyɔ	giliyɔ	onemɛ
dual	nɛnɔ	gɛgɔ	ɔlenɔ	nain	gain	ɛlɛmɛ

The word order in the verbal sentence is subject-object-verb if the subject is not focussed, and object-subject-verb if the subject is in focus.

2.6.2.2.6.6.4. *Kasua*

Kasua is spoken by perhaps a few hundred people living on the southern slopes of Mount Bosavi. The classification of the language is based on a short unpublished wordlist.

2.6.2.2.6.6.5. *Kware*

Kware is spoken between the headwaters of the Wawoi and Bamu Rivers on the southern slopes of Mount Bosavi. The number of speakers is unknown, but probably will not exceed a few hundred. The classification of the language is based on a short unpublished wordlist.

2.6.2.2.6.7. The Duna-Bogaya Family

2.6.2.2.6.7.0. The Duna-Bogaya Family consists of two geographically separated languages: Duna, spoken by about 6,000 people living in the river valleys to the south, west, and north of Lake Kopiago in the Southern Highlands District, and Bogaya, spoken by an unknown number of people living on the southern slopes of the Müller Range in the Western District. Since this area is very thinly populated one can expect the number of Bogaya speakers to be only a few hundred. Duna and Bogaya have been treated as family-level isolates by R. Shaw (1973), but in the opinion of the present writer the two languages constitute one family. Their cognation percentage which is just over 30% has probably been deflated by heavy borrowing of vocabulary by Duna from its eastern neighbour, the Huli language. Lexicostatistically Duna forms a link between the Central and South New Guinea Stock and the East New Guinea Highlands Stock; structurally it ties in more closely with the languages of the Awin-Pa Family, the East Strickland Family, and the Bosavi Family of the Central and South New Guinea Stock than with the languages of the ENGH Stock.

2.6.2.2.6.7.1. *Duna*

There are no published sources of information on the phonological and grammatical structure of Duna. The present writer had at his disposal a short grammatical statement prepared by members of the Summer Institute of Linguistics[20] and two wordlists. There seem to be several dialects in Duna, but details are not available.

The consonant and vowel phonemes in Duna are: p [pʰ], t [tʰ], k [kʰ], b [b, p, β], d [d, t, r], g [h, g, ɣ], m, n, r [ɾ, ɾ̥], l, w, y, h; i, e [e, ɛ], a, o [ɔ], u. The language is probably tonal.

Verbs take suffixes indicating negative, tense/aspect, and mode, in this order. In some forms negation is marked by a prefix. There are no affixed person or number markers.

Non-final verbs have suffixes marking consecutive action, sequence action, and simultaneous action.

Verb stems can be compounds, consisting of two verb roots.

Nouns: verbal nouns can be derived from nouns by the addition of a tense/aspect suffix to them. The category of locative nouns shows suffixes marking singular, plural, and proximity.

The personal pronouns are:

	1	2	3
sing.	no	go	ko
plur.	inu	inu	kunu
dual	gena	nego	kena

They also seem to function as possessive pronouns, preceding the possessed noun.

The basic word order in the verbal sentence is subject-object-verb, e.g. Hedawi-ga hinandu no-da ngu *(Hedawi*-subj.marker *sw.potato me-to gave) Hedawi gave me a sweet potato.*

2.6.2.2.6.7.2. *Bogaya*

Two wordlists were the only data available to the writer; they show that the grammatical structures of Bogaya and Duna are probably very similar. For example, Bogaya no, Duna no *ate;* Bogaya no-si, Duna ne-yaná *eating;* Bogaya na, Duna na-nda *will eat.*

The personal pronouns are:

	1	2	3
sing.	no	ko	ho
plur.	inu	gelo	hinu
dual	gina	gela	ane

The few examples of verbal sentences show the usual order of subject-object-verb: ami moso yuku nosi *(man one yam eating) one man is eating a yam.*

2.6.2.2.6.8. The Mombum Family

2.6.2.2.6.8.0. This family is found along the south-eastern edge of Kolopom (Frederik Hendrik) Island. There are two member languages, Mombum and Koneraw; the total number of speakers may not exceed 500.

2.6.2.2.6.8.1. *Koneraw*

Koneraw is spoken by an unknown number of speakers living in one village on the south coast of Kolopom Island. The only data in this language which have been published, is a wordlist of about 450 items (Geurtjens 1933, pp.398-433). A basic wordlist of 160 items, based on the list in Geurtjens, showed about 50 cognates with Mombum. The list does not contain any information on the grammatical structure of Koneraw; only the pronouns can be given here:

	1	2	3
sing.	no	yu	uŋumi
plur.	ni	imu	tonte

2.6.2.2.6.8.2. *Mombum*

Mombum is spoken by over 200 people living in one small village on Komolom Island at the south-eastern tip of Kolopom Island. A 450-item wordlist of the language (called Komelom) can be found in Geurtjens 1933. Drabbe published some grammatical notes on Mombum together with a wordlist of 422 items (Drabbe 1950b).

Mombum seems to have the following consonant and vowel phonemes: p, t, k, b, d, g, m, n, ŋ, f, s [s, š], (z), gh [x, ɣ], r, w, y; i, e, ü, ö, a, u. o.

Suprasegmentals: stress; no rules of stress placement have been given.

Verbs take suffixes expressing tense, aspect, or mode, and person/number of subject; e.g. nuku *eat*, nuku-numur-i *(eat*-pres.tense-3rd pers. sing.*) he is eating*. With subject suffixes, the following semantic distinctions are made: 1st, 2nd, 3rd person singular, 3rd, non-3rd person plural. A negativizer suffix can follow the tense suffix in present tense forms, or precede it in distant past tense forms. Verbs with plural object take a plurality-of-object marker directly after the stem: iröw-esir-u *(beat*-fut-1st pers.sing.*) I shall beat him;* irow-ghebw-esir-u *(beat*-plur.obj.-fut.-1st pers.sing.*) I shall beat them.*

Personal pronouns have two forms, one functioning as subject, the other as object or indirect object:

Pronouns:	as subject			as object:		
	1	2	3	1	2	3
sing.	nu	yu	aaŋgib	ney	iwey	ewey
plur.	num	yum	anemre	numwey	imwey	anemrey

The possessive pronouns are: ne, numa, iwe, ima, ewe, anemre; they precede the possessed noun.

The basic word order in the verbal sentence is subject-object-verb, e.g. nagha wieŋk kemu-numuri *(my) brother is making a canoe.*

2.6.2.2.6.9. Somahai family-level Isolate

Somahai is the language spoken by the recently contacted Somahai tribe living in the Bim River area. The Bim is an eastern tributary of the Balim River in the foothills of the central ranges. The same language is also spoken on the upper reaches of the Catalina River. Two wordlists, one collected by John Wilson (R.B.M.U.) and one by Bob Leland (T.E.A.M.) show that Somahai belongs to the Central and South New Guinea Stock; its closest relationships appear to be with the Ok languages and the languages of the Dumut sub-family of the Awyu-Dumut family.

2.6.2.2.7. *THE GOLIATH SUB-PHYLUM LEVEL FAMILY*

2.6.2.2.7.0. The languages of the Goliath Family extend over a large part of the central highlands in eastern Irian Jaya, also taking in small parts of the lowlands south and north of the ranges. In the west, the family borders on the Dani language (Dani Family), and in the east on Ngalum (Ok Family). Bromley[21] describes the area of the Goliath languages as follows:

> "On the north side of the range, the boundary between the Dani and this family follows the Obagak river in the Jalymo area of the Hablifoeri headwaters, then runs northward to include the Usagek 'valley of the seventy' (...).[22] South of the range, this boundary is between the Seng valley and the Erok valley. From these boundaries with Dani, this language family stretches eastward and includes all the valleys of the Marijke or A river system on the north side of the range, including Ok Bi, the easternmost valley in this system, where Kupel is spoken. Kupel is also spoken in a few villages south of the range on the upper Ok Tyop, just north of Ok Sibil (...). From there westward languages of this family, including that early reported for Goliath mountain 'pygmies' (...) are spoken as far as the boundary with Dani. In contrast with the Dani languages, so far as is known, these languages are reported to be spoken

> both north and south of the range down to very low altitudes where sago is commonly eaten and canoes are used (...)".

At present it is still unknown how many languages are members of the family, but at least six of them are now more or less known. They are: Yaly, Wanam, Naltya, Korapun (Erok valley), Mt Goliath, and Kupel. The total number of speakers of Goliath languages is roughly estimated at 50,000.

There are only a few published sources of information on the Goliath languages: the earliest is a short wordlist of the language of the Mount Goliath Papuans, first published in 1912 (De Kock 1912) and reprinted in le Roux 1950, pp.902-13. Bromley (1967) presented the first classification of the language as a family; Voorhoeve (1968) included the family in the TNGP (then Central and South New Guinea Phylum).

At present several of the Goliath languages are being studied by missionaries of the A.P.C.M. (Asia Pacific Christian Mission) and the RBMU (Regions Beyond Missionary Union), but no results of their work have been published. The present writer had at his disposal wordlists in Yaly, Wanam, Naltya, and Korapun, and a phonological statement on Naltya by M. Bromley, kindly made available to him by the latter.

2.6.2.2.7.1. Naltya

The Naltya language is spoken in the T River Valley area about 50 kilometers east of the Dani language border. The number of speakers is not known. Naltya has the following consonant and vowel phonemes: p [pʰ], t [tʰ], k [kʰ], b [ɓ, β, p], d [ɗ, ʀ, r̃, t], g [ɠ, ɣ, k], ʔ, s, h, m, n, ŋ, l, w, y; i, ɪ, e, a [a, ʌ], o, ʊ, u. The language is tonal and has two tonemes, low-rising, and high-falling.

Pronouns: only three forms have been noted: 1st person singular na, 1st person plural nun, and 2nd person singular an.

No further grammatical information is available.

2.6.2.2.7.2. Yaly

Yaly is spoken in the Yaly area east of Angguruk, i.e. close to the Dani language border. The cognation percentage with Naltya is about 65%. The following pronouns have been noted: 1st person singular na, 1st person plural nu, 2nd person singular an.

No further data are available.

2.6.2.2.7.3. Wanam

Wanam is spoken near the Dani language border, not far north of Angguruk. Wanam also has about 65% cognation with Naltya. The following pronouns have been noted: 1st person singular na, 1st person plural nu, 2nd person singular an.

No further data are available.

2.6.2.2.7.4. Korapun

Korapun is spoken in the Erok Valley on the southern side of the range, not far from the Dani language border. The cognation percentages with Wanam and Naltya are 46% and 53% respectively. The language is reported to be tonal. No further data are available.

2.6.2.2.7.5. Mount Goliath

Mt Goliath is spoken on the southern slopes of Mount Goliath to the south-east of Erok valley. The wordlist of De Kock, although sufficient to identify the language as a member of the Goliath family, is too short to compute meaningful cognation percentages.

2.6.2.2.7.6. Kupel

Kupel, earlier thought to be a dialect of Ngalum (Healey 1964b), has recently been identified as a Goliath language. No further data are available.

2.6.2.2.8. *THE DANI-KWERBA STOCK*

2.6.2.2.8.0. The Dani-Kwerba Stock can be divided into two geographically separated parts, a southern division, consisting of the Great Dani Family, and a northern division containing the Kwerba Family and two family-level isolates, Saberi and Samarokena. The four families have been tentatively united into one stock upon the recent discovery of stock-level relationships between the Kwerba language and Grand Valley Dani. The Great Dani Family has earlier been classified as a stock-level family (Bromley 1967, Wurm 1972). The total number of speakers within the stock is estimated at about 225,000.

2.6.2.2.8.1. Southern Division: The Great Dani Family

2.6.2.2.8.1.0. The Great Dani Family centres round the valley of the Balim River in the central highlands of Irian Jaya. In the east the family borders on the Goliath languages, in the west on the languages of the Wissel Lakes-Kemandoga Stock. There are three sub-families within the Great Dani Family: Dani, with the member languages Western Dani and Grand Valley Dani, Ngalik-Nduga with North Ngalik, South Ngalik and Nduga as member languages and Wano, a sub-family-level isolate. The languages of the family are spoken by a total of about 220,000 people.

The best known language of the family undoubtedly is Grand Valley Dani, which has been the subject of detailed study by two eminent linguists, M. Bromley and P. van der Stap. Bromley published a detailed phonological analysis (1961) and recently completed an extensive grammatical study entitled "The Grammar of Lower Grand Valley Dani in Discourse Perspective" (Bromley 1972). Van der Stap published a morphology of Grand Valley Dani as spoken near the government station Wamena (Van der Stap 1966). Other sources of information on languages of the family are Bromley's classificatory study of the Dani languages (1967) and two early wordlists of northern dialects of Western Dani, reprinted in le Roux 1950. Unpublished materials include a Dani-Dutch and Dutch-Dani dictionary, a short pedagogical grammar of the Ilaga Valley dialect of Western Dani, both by Van der Stap, and an outline of the grammar of the Bokondini dialect of Western Dani by Charles Horne (1959).[23]

2.6.2.2.8.1.1. *Grand Valley Dani*

Grand Valley Dani consists of a chain of dialects stretching from the Pyramid Mountain area in the upper Grand Valley to the Samenage River on the south-west side of the Balim gorge, and the Wet River on the north-east side of the gorge. Grand Valley Dani dialects are also spoken in enclaves between Grand Valley and Archbold Lake and between Grand Valley and some North Ngalik populations.[24]

The phonemic system of Lower Grand Valley Dani, described by Bromley, contains the following consonants and vowels: p [p, β, p̂], t [t, r, t̂], k [k, ɣ, k̂], kw [k^w, $ɣ^w$], s, h [m̥, n̥, ŋ̊, ɬ], m, n, ŋ, l, w, j; i, y [ɪ], u, ʊ, e, o, a.

This dialect lacks the double series of stops and the implosives present in most other dialects, as for instance in the Mugogo dialect described by Van der Stap:

Dani (Mugogo dialect): b, d, g, ʔ : voiceless unaspirated stops [p, t, k, ʔ];
p, t, k : voiceless (aspirated) stops fricatives [p^h, t^h, k^h], [p, t, k], [β, ř, ɣ];
bp, dl : implosives [ɓ, ɗ]

Grand Valley Dani is non-tonal; phonological words have a primary stress on the word-final syllable.

Morphological processes found in Grand Valley Dani are addition (suffixing, prefixing, infixing), modification (vowel change), reduplication, and compounding.

Verbs take suffixes and infixes indicating tense, aspect, mode, voice, subject, and object. The order of the suffixes is generally: voice or object (if any); tense, aspect or mode; subject. The habitual-aspect marker follows the subject in some forms and can take an infixed tense marker. Some examples: bal-ikin *will cut* (one actor), bal-ukun *will cut* (plural actor); bal-hy-tek (verb root-subject-aspect) *I cut habitually*; bal-hy-te-si-k (with tense infix si, and aspect indicated by a discontinuous morpheme te-k) *I used to cut.* There are several voice categories: energetic, causative, medial, reciprocal (with reduplication of the verb root), and three object-voice categories. Examples: gok *large,* causative: gok-othan- *to enlarge*; idas-in *to give birth,* medial: idat-las-in *to be born*; dal-in *to stab,* reciprocal: dal-dal-oko *we stab each other*; isas-in *to cook,* object 1, benefactive: isat-nes-in *to cook for me*; sal-in *to cover,* object 2: sal-nap-in *to cover me;* object 3: isak-han-in *to urge me to cook, force me to cook.*

There are sentence medial forms expressing two kinds of consecutive action by the same actor(s): a) unrelated actions, b) actions which follow logically, have something to do with each other.

Verb stems can be compounds, consisting of a verb root plus a verb root meaning *to come, to go* or *to stay.* There is a separate category of existential verbs.

Nouns take possessive prefixes; generally number is not expressed in nouns except in a few kinship terms which have distinct singular and plural forms.

The personal pronouns distinguish between three persons in singular and plural. They are:

	1	2	3
sing.	an	hat	at
plur.	nit	hit	it

At present no information is available on the word order in verbal sentences.[25]

2.6.2.2.8.1.2. *Western Dani*

Western Dani, locally known as Laany, is spoken in all the North Balim, the Swart Valley system, most of the Sinak and upper Yamo, most of the Ilaga, in enclaves in the Beoga, Dugindoga and Kemandoga valleys, in the extreme upper Hablifuri watershed around Bokondini, the top of Grand Valley, and in enclaves in the upper Kimbin and Bele valleys.[26] The following notes are based on Van der Stap's description of the Ilaga valley dialect.

The sound system contains the following consonant and vowel phonemes: p^h, t^h, k^h, p [p, b], t [t, ř], k [k, x], mb [mb, mp], nd [nd, nt], ng [ŋg, ŋk], k^w, g^w, m, n, l, w, j; i, y [ɪ, e], e [ɛ], a [a, ɑ], o [ɔ], v [ʊ], and u. The language is not tonal; no rules of stress placement have been given.

Verbs take suffixes marking tense, aspect, mode, subject, object (there is no information on voice marking). Durative aspect and future tense forms distinguish only between singular and plural; they lack person marking. Three different kinds of object markers are distinguished: benefactive, object, and 'object of an enforced action'. These object markers always directly follow the verb stem. A few verbs however take prefixed object markers. Some examples: verb stem (VS)-tense-subject-aspect: mban-e-ky-tak *I have cut (it) long ago*; VS-object-subject-tense: yokot-ne-he-tak *he told (it) me long ago*; n-ootiak- *beat me,* k-ootiak- *beat you.*

The personal pronouns are:

	1	2	3
sing.	an	kat	at
plur.	nit	kit	it

The possessive forms are n(a)-, k(a)-, nin(a)-, kin(a)-, in(a)-; they are prefixed to the possessed noun.

The basic word order in the verbal sentence is subject-object-verb as in: an tu nak-ky *(I door closed-I) I closed the door*; wuloke lytv mbanekwatak *the boys have broken the needle (long ago).*

2.6.2.2.8.1.3. *North Ngalik*

North Ngalik is spoken to the north, east and south of Grand Valley Dani, separating this language from the Goliath languages. There are between

30,000 and 35,000 speakers of the language. The Dani call this language Yaly; the North Ngalik speakers themselves use this name to refer to the language of the Goliath Family spoken to the east of them (see above, 2.6.2.2.7.2.).

General information on North Ngalik can be found in Bromley 1967; actual language data are not available.

2.6.2.2.8.1.4. *South Ngalik*

South Ngalik is a provisional name to refer to a group of dialects or languages spoken by about 5,000 people living on the western side of the Balim gorge, south of the Grand Valley Dani language area. These dialects or languages are not yet adequately known. General information on South Ngalik can be found in Bromley 1967.

2.6.2.2.8.1.5. *Nduga*

Nduga, or Ndugwa, is spoken by about 10,000 people living on the southern slopes of the ranges to the south of the Western Dani language area, and in a few small enclaves on the Dugindoga, Sinak, and Uwe Rivers in the Western and Grand Valley Dani language areas. General information on the language can be found in Bromley 1967.

2.6.2.2.8.1.6. *Wano*

Wano is spoken by about 1,500 people living on the north side of the Yamo River valley. Bromley (1967) classified the language as a subfamily-level isolate of the Great Dani Family, but later (1970)[27] gave as his opinion that further study might put it within the Dani subfamily.

2.6.2.2.8.2. Northern Division: The Kwerba Family, Saberi, Samarokena

2.6.2.2.8.2.0. The languages of the northern division extend along the north coast of Irian Jaya from near the mouth of the Apauwar River to the mouth of the Woske River, and from these points inland in a southwesterly direction until the Mamberamo River has been reached. The southernmost point of the division is just inside the Lake Plain. The classification of the languages in this division as members of one stock rests partly on the few lexical data on hand, partly on the account of the linguistic situation in the area by Van der Leeden (1955), and is highly tentative for at least two of the languages, Saberi and Samarokena.

The total number of speakers of languages within the division may not exceed 3,000. No figures are available for most of the individual languages.

2.6.2.2.8.2.1. *The Kwerba Family*

The Kwerba Family takes up about the whole western and southern half of the area. There are three member languages: Kwerba, Airoran, and Sasawa.

Kwerba is spoken between the middle Mamberamo and the Apauwar River, and on the headwaters of the Apauwar, Waim, Ferkam, and Woske Rivers. There seem to be several dialects, but the scanty data do not allow a clear picture of the situation. The published data are 1) a wordlist of a north-western dialect of Kwerba, named Koassa, near Rombebai Lake (Anonymous 1913), 2) a wordlist of the north-eastern dialect spoken by the Airmati tribe, or Naydbej (Oosterwal 1961), and 3) a wordlist of about 500 words and a collection of sentences in the language of the Kaowerawej tribe near Pioniersbivak on the Mamberamo River, by Van Eechoud (1962). Unpublished data available to the writer were Anceaux' lists in Kaowerawej, Airmati, and Kwerba, and a Kwerba list collected by Bromley.

The contents of all these lists are sufficiently similar to assume that they represent different dialects of the same language. They also show quite a few striking correspondences with Grand Valley Dani, enough to posit a stock-level relationship between the two languages. It is on this basis that the languages of this division have been united into one stock with the Great Dani Family.

Airoran is spoken on both sides of the lower Apauwar River, with a western extension reaching the Mamberamo just downstream of Rombebai Lake. The inclusion of Airoran in one family with Kwerba rests on the account given by Van der Leeden, who reports that the Kwerba, Airoran, and Sasawa languages link up closely, at least on the lexical level (Van der Leeden 1955, p.17).

Sasawa is spoken in a small area on the western side of the middle Apauwar River. Its inclusion in the Kwerba Family rests on the same argument as the inclusion of Airoran.

2.6.2.2.8.2.2. *The Samarokena and Saberi family-level Isolates*

Samarokena is spoken east of Airoran between the Apauwar and Waim Rivers; Saberi, locally also known as Isirawa, is spoken in the coastal area east of Samarokena. The number of Saberi speakers is estimated at 1,500.

Van der Leeden reports that the Samarokena and Saberi languages are related to Kwerba, but less closely than Sasawa and Airoran. The very short wordlists available (less than 20 items) do allow only a guess at the relationships. Their classification as family-level isolates is therefore highly tentative.

2.6.2.2.9. *THE DEM STOCK-LEVEL ISOLATE*

Dem is spoken by some 500 people living on the north side of the Jamo branch of the upper Rouffaer River. The language has its closest relationship - ± 14% of shared cognates - with the Damal dialect of Uhunduni (quoted by Bromley, see note 21). The only published data in Dem is a list of 673 words and some sentences collected by Le Roux (Le Roux 1950) and a list of a few words in Galis' survey (Galis 1955). Some remarks on the classification of Dem can be found in Bromley 1967.

2.6.2.2.10. *THE WISSEL LAKES-KEMANDOGA STOCK*

2.6.2.2.10.0. The languages of this stock extend over the central highlands and the northern and southern slopes of the ranges from the Dani territory in the east to beyond the Weyland Mountains in the west. The stock consists of the Ekagi-Wodani-Moni Family and the Amuŋ family-level Isolate. The total number of speakers of languages within the stock is estimated at 92,000.

2.6.2.2.10.1. The Ekagi-Wodani-Moni Family

2.6.2.2.10.1.0. The family takes up the western and northern parts of the territory of the stock. There are three member languages: Ekagi, Wodani, and Moni. A lexicostatistical study of the interrelationships of the three languages was published by Larson and Larson (1972).

2.6.2.2.10.1.1. *Ekagi*

Ekagi (Kapauku) is spoken by over 60,000 people living in the valleys surrounding the Paniai and Tigi Lakes (Wissel Lakes) and on the headwaters of the Siriwo River to the north-west. There are numerous dialects in the language; of these, the Tigi dialect spoken round the government and mission station Enarotali is the best known. Three early wordlists of dialects of Ekagi were published in Le Roux 1950; grammatical notes on the language were first published by Drabbe (1949b). An English abstract of these appeared in Boelaars 1950. Drabbe later published a grammar

(1952) which has been superseded by the more modern oriented pedagogical grammar by Steltenpool and Van der Stap (1959). Marion Doble of the Christian and Missionary Alliance (C.A.M.A.) published a paper on transliteration in Kapauku (Ekagi) (1950), a Kapauku-Malayan-Dutch-English dictionary (1960) and essays on Kapauku Grammar (1962). Finally, in 1969, Steltenpool published a large Ekagi-Dutch-English-Indonesian dictionary. The notes presented below are based on Steltenpool and Van der Stap.

The phonemic system of Ekagi has the following consonant and vowel phonemes: p, t, k [k, k^w, x], b, d, g [g^l], m, n, w [w, β], y; i, e [ɛ], a [a, ɑ], o [ɔ], u. The language is tonal; there are three step tonemes, high, mid, and low.

Morphological processes found in Ekagi are affixing (prefixing, suffixing), modification (vowel change), and compounding.

Verbs take suffixes marking aspect, tense, and subject in this order, e.g. ani-maki-to-omeg-i (*sit-down*-durative aspect-past tense-3rd pers. sing., masc.) *He sat down (and stayed there, long ago).*

Verbs take prefixes marking reciprocal action, dual number of subject, or object. Two kinds of object are distinguished: object I is closely associated with the action (direct object) and object II is loosely associated with the action (indirect object, benefactive, the person on whose behalf the action is executed). The order is: dual marker (if any)-object II (if any)-object I. The sequence object II + object II can also occur. Some examples: na-do-og-i *(me-see*-today's past-*he) he saw me today [as you know]*. na-do-p-i *(me-see*-today's past-*he) he saw me today [as you didn't know]*. (The first sentence does not convey new information to the addressee, the second does.) naa-ya-mene-i *(for me-to him-take*-imp.*) take it to him on my behalf!*

There is a variety of dependent verbs, some of which express consecutive or simultaneous action by the same or a different subject.

Nouns can be simple, compound, or derived from adjective or verb roots. They show two gender classes which are manifested in the concord of personal pronouns, demonstratives, and the 3rd person singular subject marker of the verb. They take case marking suffixes in the 'inert' and 'energetic' cases (see below).

Personal pronouns all have four case forms:

a) 'inert' case forms, occurring as subject of intransitive verbs and as object of transitive verbs;

b) 'energetic' case forms, occurring as subject of transitive verbs;

c) 'neutral' case forms which can substitute for those of a) and b) above;

d) 'locative' case forms.

The neutral forms of the pronouns are:

	1	2	3
sing.	ani	aki	okai
dual	inai	ikai	okeiyai
plur.	inii	ikii	okei

Gender distinction is found only in the non-neutral case forms, e.g. in the 'inert' case: *I* ani ki (masc.), ani ko (fem.); *you* (sg.) aki ki (masc.), aki ko (fem.); *he* okai ki (masc.), okai ko (fem.); *we* anii ke (masc.), inii ko (fem.), etc.

Word order in verbal sentences: generally the verb is sentence-final; the relative position of subject and object is free, thus both subject-object-verb and object-subject-verb sentences can occur.

2.6.2.2.10.1.2. *Wodani*

Wodani is spoken by about 3,000 people living in the lower Mbiyandoga and Kemandoga valleys. There are three dialects in the language; upper Mbiyandoga, lower Mbiyandoga, and mid-Kemandoga. Wodani shares between 50% and 52% cognates with Ekagi. A short wordlist on Wodani (Wolani) appeared in Le Roux 1950. The only other published source of information on the language seems to be Larson and Larson 1972; their paper contains only phonological data.

The Wodani sound system is: p [p^h], t [t^h, $t^{\check{s}}$, š], k [k^h, ɣ], b, d [d, dl, $\check{r}$], g [g^l, $k^{\downarrow}$], ^{m}b, ^{n}d, ^{n}g, m, n, w [w, β], y [s, s, y], h; i, e [e, ɛ], a, o, u. Vowel nasalization is distinctive; the language is tonal.

2.6.2.2.10.1.3. *Moni*

Moni is spoken mainly in the Kemandoga and Dugindoga valleys and in the upper Hegenagi valley, to the east of the lakes. There are about 12,000 Moni speakers. No information is available on the dialect situation in the language.

An extensive Dutch-Moni glossary, compiled from wordlists collected between 1926 and 1938, can be found in Le Roux 1950. In 1958, preliminary studies in the Moni language by M.O. and G.F. Larson became available, but to date no further data in the language have been published. The present writer was able to use of an unpublished grammar and dictionary by Van der Stap.

The sound system contains the following consonant and vowel phonemes: p [pʰ], t [tʰ], k [kʰ, g], b, d [d, l, dl, ɾ], s [s, š], h, mb, nd, ŋg, m, n, w [w, β], y [j, z, ž]; i, e [e, ɛ], a, o, u. Vowel nasalization is distinctive; the language is tonal but no details of the tonemic system are available.

Morphological processes in the language are affixing (almost exclusively suffixing), and modification (vowel change).

Verbs take suffixes marking aspect, tense, subject (in this order), and mode. The only prefixes of verbs are the negation marker, the reciprocal action marker, and object prefixes. The object prefixes (for 1st, 2nd, and 3rd person singular only) are restricted to a few verbs. There is a large variety of dependent verbs, some of these expressing consecutive or simultaneous action by the same subject.

There is a weak system of two noun classes, manifested only by agreement of the 3rd person singular pronoun. Nouns do not vary for number or case.

With the personal pronouns, three persons are distinguished in singular, dual, and plural.

	1	2	3
sing.	a	aga	ogo (masc.)
			oa (fem.)
dual	ena	iya	uiya
plur.	i	igi	ui

Forms of this series function as subject, object, indirect object, and as possessive pronouns. From these pronouns two more series can be derived: 1) by suffixing -ti/ndi: pronouns which function mainly as subject of transitive verbs; 2) by suffixing -go: pronouns which function as subject of intransitive verbs, object of transitive verbs, and as subject in nominal sentences.

In verbal sentences the word order usually is subject-object-verb, but the order object-subject-verb also occurs.

2.6.2.2.10.2. Uhunduni

Uhunduni, also known as Damal, Amuŋ or Enggipilu, is spoken by perhaps 12,000 people living to the north-east and the south-west of the Carstensz massif. The language borders in the east on Western Dani and in the west on Moni and Ekagi. Two early wordlists, of different dialects of the language were reprinted in Le Roux 1950. Otherwise no language materials in Uhunduni have been published. The present writer was able to make

use of an unpublished grammar and dictionary of the Amuŋ dialect by Van der Stap.

The sound system of Uhunduni (Amuŋ dialect) contains the following consonant and vowel phonemes: p [p, p^f, mp, b, w], t [t, ts, s, nt, ḍ, ṛ, ř, j], k [k, k^x, ŋk, x, g], m [mb, b], n [n, nd, d, l], ŋ [g, ŋg], l [l, ḷ], w, y; i, e, a [æ], o, u. The language has contrastive vowel nasalization and three tonemes: high, mid, and low.

Morphological processes found in Uhunduni are affixing (prefixing, suffixing), compounding and (re) duplication.

Verbs take suffixes marking object, mode, tense, aspect, and subject. Subject markers follow tense or aspect markers; sometimes they are fused with them to combined tense/subject or aspect/subject markers. There is only one object suffix, marking a 1st or 2nd person singular or plural object.

There is a variety of dependent verbs some of which express simultaneous action by the same subject [a) contrastive, b) non-contrastive], or consecutive action by the same subject.

Nouns do not vary for number, except for the members of a closed set of kinship terms which take a pluralizer suffix. A kind of collective plural is formed by duplication of a noun with simultaneous insertion of -ak- between the noun and its duplicate; buk *mountain* bugakbuk *highlands*.

A typical feature of Uhunduni nouns is that they have a 'status absolutus' and a 'status constructus' form; the last one is used when the noun expresses a semantic relation to something or somebody, e.g. puŋ *iron nail*; na-puŋ *nail in relation to somebody, something*; kol *widow*, nakol *somebody's widow*; kam *chest*, nao nakam *my chest* (the relation is not necessarily possessive, e.g. in: n-ikak nao bogoen *(brother-him-follow) the brother who comes after him (in age)*.

Nouns can take a suffix marking case; there are four of these: -ao 'energetic case' (subject of transitive verb; instrument), -o 'inert case' (subject of intransitive verb, object of transitive verb), -a 'locative', and -et 'comitative'.

Personal pronouns can be marked for the following cases: inert, energetic, comitative, locative, personal (*I myself* etc.). The unmarked forms, which also function as possessive pronouns, are:

	1	2	3
sing.	na	a	na
dual	iru (incl.)	-	-
plur.	enoŋ	erop	nuŋ

The word order in the verbal sentence can be subject-object-verb, or object-subject-verb. In the last case the object is marked for the inert case.

2.6.2.2.11. *THE NORTHERN SUB-PHYLUM-LEVEL SUPER-STOCK*

2.6.2.2.11.0. The Northern Super-Stock consists of two geographically separated stocks, the Tor-Lake Plain Stock, and the Border Stock. The two stocks have a closer relationship with each other than with other stocks within the Trans-New Guinea Phylum, but these relationships are not close enough to unite them into one stock. The qualification 'sub-phylum-level' indicates that the status of the super-stock as a member of the Trans-New Guinea Phylum is still open to doubt, since its member languages contain typological features which are not shared by the 'established' TNGP languages.

2.6.2.2.11.1. The Tor-Lake Plain Stock

2.6.2.2.11.1.0. The Tor-Lake Plain Stock extends over the western and central part of the Lake Plain and the adjoining area to the north, from the Kwerba Family in the west to the Nimboran Family 150 kilometers further east.

The stock consists of three families and three family-level isolates; they are, roughly from west to east: the Turu family-level Isolate, the Central Lake Plain Family, the East Lake Plain Family, the Tor Family, the Mawes family-level Isolate, and the Uria family-level Isolate.

Very little is known about the languages of the stock; the only data available are wordlists of at most 150 items, and only few of these have been published, viz. some wordlists of the Tor languages (Oosterwal 1961) and a wordlist of Tori Aikwakai (Feuilleteau de Bruyn 1952). In addition, the writer relied on unpublished lists from Anceaux' collection (Tor River languages, Mawes, Uria, Taworta-Aero), and on a number of lists in the Lake Plain languages made available to him by M. Bromley. It goes without saying that the present sub-grouping of the languages of the stock is only tentative.

2.6.2.2.11.1.1. *The Turu family-level Isolate*

Four wordlists from different points in the western tip of the Lake Plain show that in the area of the upper Rouffaer and Van Daalen Rivers one single language is spoken. At present this language, provisionally named the Turu language seems to constitute a family-level isolate by itself.

2.6.2.2.11.1.2. *The Central Lake Plain Family*

This family extends from the Middle Rouffaer as far east as the north-south stretch in the Idenburg River not far from its junction with the Rouffaer River; northward it reaches to near Lake Holmes in the centre of the Van Rees Mountains. There are nine wordlists from different points in the area representing seven closely related languages, or dialects. They are:
Baburiwa spoken in the mountains south of Lake Holmes;
Taogwe, formerly spoken at Kwerisa downstream of Bareri; the speakers of this language recently moved to Kei on the lower Rouffaer River;
Tàori-Kei, spoken at Kei on the lower Rouffaer River;
Tori Aikwakai, spoken on both sides of the Mamberamo River just north of the junction of the Rouffaer and Idenburg Rivers;
Papasena on the lower Idenburg River, near the Idenburg-Rouffaer junction;
Weretai, spoken round Taive mission station at some distance south of the Idenburg-Rouffaer junction;
Tàori-So, originally spoken on the lower So (Swart) River; the speakers of this language have now settled at Taive.

2.6.2.2.11.1.3. *The East Lake Plain Family*

Four wordlists from different points in the area represent three or perhaps two closely related languages.
They are:
Taworta-Aero, not far east of Taive on the south bank of the Idenburg River;
Dabra, spoken at Magambilis in the foothills south of the middle Idenburg River. (Taworta-Aero and Dabra are very closely related, and perhaps dialects of one language.)
Foau at some distance north of the middle Idenburg River.

2.6.2.2.11.1.4. *Notes on the East Lake Plain and Central Lake Plain Families*

Bromley notes that Dabra seems to be tonal; it further appears that all the Lake Plain languages except Dabra and Baburiwa have implosive stops. Baburiwa has nasal vowels.

All the wordlists contains only three personal pronouns: *I*, *we*, and *you* (sing.). A survey of these pronouns is given below.

	dialects of: Western Lake Plain	Baburiwa	Taogwe	Kei
I	aβoai, abui, abui	hi, i	ʔi	ʔi
We	naɓoai, ifafu, ifafu	ʔ	a	a^{i}yura
You(sing.)	ɗiβoai, divai, diwarevi	do, di	ɗi	ɗi

	Papasena	Weretai	So	Dabra	Foau
I	ioke	ɩ	ɩ	a	adu
We	peɬeɬa	ʔa	a	yi	edu
You(sing.)	ɗi	ioko(ʔ)	ɗi	doa	doβa

2.6.2.2.11.1.5. *The Tor Family*

The languages of the Tor Family are spoken in the basin of the Tor River and on the western tributaries of the Biri River.

The family has at least six member languages: Berik, Bonerif, Mander, Itik, Kwesten, and Maremgi. A possible seventh member is the language of the Wares tribe, east of the Biri River, but no data in this language are available. The Wares belong culturally to the Tor River tribes (Oosterwal 1961, p.46). The total number of speakers within the family is perhaps a little more than 1,000.

Berik is spoken on both sides of the middle Tor River, and on the southern tributaries of the upper Tor River;
Bonerif is spoken on an eastern tributary of the middle Tor River;
Mander is spoken to the south of Bonerif;
Itik is spoken to the east of Bonerif;
Kwesten is spoken along the coast and the immediate hinterland.
Maremgi is spoken to the east of Kwesten, inland of Mawes (see below).

2.6.2.2.11.1.6. *The Mawes family-level Isolate*

Mawes is spoken in two coastal villages east of Kwesten. The number of speakers is not known.

2.6.2.2.11.1.7. *The Uria family-level Isolate*

Uria is spoken by at least 1,000 people living between the middle Wiru River and the Sermo River. In the north-east the language borders on the Nimboran Family.

2.6.2.2.11.1.8. *Pronouns in the Tor Family Languages, Mawes, and Uria*

The following chart gives an overview of the pronouns found in the wordlists. The reliability of the lists could not be assessed; it is possible that they contain errors.

	Berik	Bonerif	Mander	Itik	Kwesten	Mawes	Uria
I	ai	ai	ai	ai	akref	kidam	hey,ae
we	-	imenansa	diere	ne	anma,ana	inem	nen
you(sing.)	a(?)	emei	eme	emi	imi,ini	nam	em
you(plur.)	-	-	-	-	amna	nem	em
he	-	jire	egi	die	de	enem(?)	jen

2.6.2.2.11.2. The Border Stock

2.6.2.2.11.2.0. The Border Stock extends over a sizeable area on both sides of the Indonesian-Papua New Guinean border. On the Indonesian side, the languages of the stock occupy a crescent-shaped area stretching from the Sekanto River south-east toward the border and back to the south-west along the Pai River. On the Papua New Guinean side they occupy a strip of about 35 kilometers wide from the upper Bapi River area in the south to the headwaters of the Tami River in the north, with a narrow extension reaching north-east toward the coast.

There are three language families in the stock: the Waris Family, the Taikat Family, and the Bewani Family. The languages of the stock are spoken by a total of about 12,700 people.

On the Indonesian side of the border, the languages of the stock became first known as the Tami languages through Cowan's survey (1953) and his classificatory study in which he united the Tor River languages and the Tami languages together with Sentani and Nimboran into the North Papuan Phylum (Cowan 1957b). In a later survey the present writer classified the Tami languages as a stock, and pointed out that the closest

relative of the Tami Stock appears to be the Tor Family: the cognation percentages between the Tor and the Tami languages partly fall within the stock-level range (Voorhoeve 1971). In the present study, the Border and Tor-Lake Plain Stocks have been united into one Super-Stock.

On the Papua New Guinean side of the border the languages of the Waris family have been surveyed by Loving and Bass (1964) and those of the Waris and Bewani Families by Laycock (1973) who gave the stock its present name.

2.6.2.2.11.2.1. *The Waris Family*

2.6.2.2.11.2.1.0. The Waris Family extends over the whole area of the stock except for the north-eastern and north-western corners, where the Taikat and Bewani families are located. There are seven member languages: Waris, Manem, Seŋgi, Waina, Daonda, Simog, and Amanab.

Some lexical data in Waris and Manem have been published by Galis (1955) and Cowan (1957b). Voorhoeve 1971 contains wordlists in Waris, Manem, Seŋgi and Waina, and some grammatical notes on Waris and Manem. Waina, Daonda, Simog, and Amanab have been surveyed by Loving and Bass (1964), and general information on all the languages has been given by Laycock (1973).

2.6.2.2.11.2.1.1. Waris

Waris is spoken by about 3,200 people on the headwaters of the Pai and Bapi Rivers; most of them live on the New Guinean side of the border. Dialects: in the east of the language area the distinct dialect of Imonda is spoken; no information is available on the dialect situation in the rest of the area.

Waris has the following consonant and vowel phonemes: p, t, k, b [b, ^{m}b], d [d, ^{n}d], g [g, ^{ŋ}g], m, n, ŋ, f, s, x [x, h], l [l, !], w, y; i, e, (ɛ), a, o, u, ə. Verbs take suffixes marking tense and person; there is no information on prefixes. Nouns can take directional suffixes and suffixes marking them as subject or object. The personal pronouns are:

	1	2	3
sing.	ka	diɛ	iɛ
plur.	pi	diɛtɛ	?

Object forms noted are kam (1st pers.sing.), jɛm (2nd pers.sing.); possessive pronouns have a suffix -nan: kanan etc.

In the few sentences collected the word order is object-subject-verb.

2.6.2.2.11.2.1.2. Manem

Manem (or Wembi) is spoken by about 400 people living in the upper Tami River area, north of the watershed between the Tami and Pai Rivers.

The consonant systems of Manem and Waris are very similar; in Manem ŋ has two allophones [g$^{\eta}$, ŋ]; a velar fricative [x] does not seem to occur, and instead of l, Manem has r [ř]. The vowels are i, e, a, o, u, ə, and possibly ü and ö.

Verbs take suffixes marking person and tense, and prefixes marking aspect and perhaps object. Suppletive roots occur with some transitive verbs if they have a plural object. Nouns take instrumental, locative, and directional suffixes. The personal pronouns are:

	1	2	3
sing.	ga	sa	aŋk
plur.	kiŋ ta	kiŋ sa	kiŋ aŋk

Object forms noted: gam (1st pers.sing.), sam (2nd pers.sing.); possessive forms noted: gaf, sef, tef (3rd pers.sing.).

The basic word order in the verbal sentence is subject-object-verb.

2.6.2.2.11.2.1.3. Remaining languages: Seŋgi, Waina, Daonda, Simog, Amanab

Seŋgi was, in 1956, spoken by about 120 people living on the middle Pai River. More up-to-date information is not available.

Waina is spoken by about 1,100 people living between the border and the upper Bapi River, south of the Waris area.

Daonda is spoken by 135 people living in one village to the north-east of Imonda airstrip. The language is most similar to the Imonda dialect of Waris.

Simog is spoken by about 270 people living in two villages due east of Imonda airstrip.

Amanab is spoken by about 3,400 people living between the border and the middle Bapi River, south of the Waina area.

2.6.2.2.11.2.2. *The Taikat Family*

2.6.2.2.11.2.2.0. The Taikat Family occupies the area between the upper Sekanto River and the western branch of the Tami River. There are two member languages: Awyi and Taikat. Some lexical data in Awyi and Taikat have been published by Galis (1955) and Cowan (1957b). Voorhoeve 1971 contains wordlists in both languages and some grammatical notes.

2.6.2.2.11.2.2.1. Awyi

Awyi is spoken by some 250 people living in four villages in the upper Sekanto area. In earlier publications the language has been called Njao.

Awyi has the following consonant and vowel phonemes: p [pʰ], t [tʰ], k [kʰ], b [ᵐb, b], d [ⁿd, d], g [ᵑg, g], m, n, ŋ, f, s, l [ɾ̆, l̆], w, y; i, e, (ɛ), a, o, u, ə [ə, ë, ə̂].

Verbs take suffixes marking tense, mode, and prefixes marking aspect and perhaps person. Some verbs have suppletive roots if they have a plural object.

Only three personal pronouns have been noted: ku *I*, kebe *thou*, and yɛ *he*. Corresponding possessive pronouns are: kayap, kebap, yap.

The few examples of verbal sentences on hand all show the word order subject-object-verb.

2.6.2.2.11.2.2.2. Taikat

Taikat is spoken by about 800 people living to the east of the Awyi language area. The language was called Arso by Cowan.

The phonemic systems of Awyi and Taikat are practically identical; in Taikat the voiced stops do not seem to have prenasalized allophones; instead of a lateral l, there is a flapped r. There is possibly a uvular fricative h.

2.6.2.2.11.2.3. *The Bewani Family*

The Bewani Family takes up the north-eastern corner of the territory of the stock. There are three member languages: Pagi spoken by about 1,000 people in the Bewani Mountains south of the Pual River; Kilmeri with about 1,800 speakers on the northern slopes of the Bewani Mountains and in a narrow strip extending from there to the north coast, and Niŋgera with about 200 speakers in one village at the mouth of the Pual River.

2.6.2.2.12. *THE SENAGI STOCK-LEVEL FAMILY*

2.6.2.2.12.0. The Senagi Family is the southern neighbour of the Waris Family; the greater part of it is on the Papua New Guinean side of the border. There are two member languages: Aŋgor (Watapor) and Dəra with a total of about 4,300 speakers.

2.6.2.2.12.1. Aŋgor

Aŋgor is spoken by about 2,600 people living south of Amanab between the junction of the Bapi and Horden Rivers in the east, the Faringi River in the west, and Green River station in the south. The language was first classified by Loving and Bass (1964) and later by Laycock (1973). R.L. and S. Litteral of the Summer Institute of Linguistics published a few papers on the language (Litteral, R. 1972, 1973; Litteral, S. 1972).

The phonemes of Aŋgor are: p, t, k, b, d, g, mb, nd, ŋg, m, n, ŋ, f, s, h, r, w, y; i, e, ɨ, a, o, u. Verbs seem to take prefixes as well as suffixes; the suffixes marking person and number, the prefixes tense.

2.6.2.2.12.2. Dəra

Dəra is spoken on the headwaters of the Faringi River in Papua New Guinea and in the environments of Amgotro mission station in Irian Jaya. The number of speakers is about 1,500. The language was first classified by Loving and Bass (1964), and further data were added by Voorhoeve (1971).

Dəra has eleven consonant and six vowel phonemes: p [p, p^f, f], t, k [k, k^x, x], b [b, ^{m}b, β, v], d [d, ^{n}d, ɾ, ɽ], g [g^{ŋ}g, ɣ], m, n, ŋ, w, y; i [i, ɪ], e [e, ɛ], a [æ, a, ɑ], o [o, ɔ, ɤ], u [u, ʉ, ü], æ [ə, $\overset{\partial}{\ddot{u}}$]. Suprasegmentals: stress, which may be phonemic.

Verbs take suffixes marking tense, aspect, mode, subject and object; there is a sentence-medial verb form indicating consecutive action by the same subject.

Nouns take a suffix -mbo when functioning as object; the same suffix is found with personal pronouns. These are:

	1	2	3
sing.	ewo	te	ea
plur.	igoa	te	namada

And the corresponding possessive pronouns:

wanda	tagaba	aganda
igoaba	tagae	namadanda

The word order in declarative verbal sentences is subject-object-verb; in interrogative sentences however the order is object-subject-verb.

2.6.2.2.13. *THE PAUWASI STOCK*

The stock is located on the headwaters of the Pauwasi River to the west of the Senagi Family, reaching north till just south of the Pai

River. The stock consists of two language families, each with two member languages: the Western Family, with Dubu and Towei, and the Eastern Family with Yafi and Emumu. The only published source of information is Voorhoeve 1971; the data on hand is restricted to wordlists. **Dubu** is spoken by about 130 people living south of the middle Apauwar River; to the south of these, about 115 people speak the **Towei** language. **Yafi** is spoken just south of the Pai River to the east of Seŋgi (2.11.2.1.3.) by about 170 people. South of Yafi, and bordering on Dəra, **Emumu** is spoken by about 1,100 people.

2.6.2.2.14. *THE SENTANI STOCK*

2.6.2.2.14.0. The Sentani Stock is located in two geographically separate areas: in the east it takes up the area round Lake Sentani, including the southern shore of Yotefa Bay; in the north-west it stretches along the north coast from Tanah Merah Bay westward to Cape Kamdara. The stock consists of the Sentani Family and the Demta family-level Isolate. Languages of the stock are spoken by a total of about 10,500 people.

2.6.2.2.14.1. The Sentani Family

The Sentani Family has three member languages: Sentani, Nafri, and Tanah Merah. The best known of these is Sentani.

2.6.2.2.14.1.1. *Sentani*

Sentani is spoken by about 6,000 people living on the islands in Lake Sentani and in its immediate environments. There are three main dialects: the Western dialect, the Central dialect, and the Eastern dialect.

The first grammatical data in Sentani were published by Wirz (1922); they are now outdated by the work of Cowan, who published grammatical notes (1951-52), texts (1950, 1952) and a short grammar, including texts and a glossary (1965). Cowan classified Sentani as a member of the North Papuan Phylum (1957b), and Voorhoeve (1969) showed that genetic relationships existed between Sentani and Asmat, which made Sentani a member of the Central and South New Guinea Phylum (which later became part of the Trans-New Guinea Phylum).

The sound system of Sentani contains the following consonant and vowel phonemes: b [b, p], d [d, t, č, l], k [k, ķ, x], m, n, f [f, Φ], h [h, s], l [l̆], w, y [j, ǰ]; i, e, ɛ, a, o [o, ɔ], u, ə [ö, ə].

The language is non-tonal; as a rule the penultimate syllable has the main stress in a word.

Morphological processes are: affixing, internal modification, (re)-duplication, and compounding.

Verbs take suffixes marking tense, aspect, mode, object and subject, and only one prefix, which is a negativizer. As a rule the relative order of the suffixes is: aspect, tense, object, subject. Cowan divides verbs into two categories: primary and secondary verbs. A secondary verb contains a suffix marking the form as directional, transitive, medial, or reflexive.

On the basis of the morphological structure of the stem, verbs can be divided into simple verbs and compound verbs. Compound stems consist of two verb roots of which the first can take a tense marker, and sometimes an object marker as well. The first root in these compound stems is always a directional verb root.

Duplicated verb stems occur in the gerund form of the verb.

The absolute forms of the personal pronouns are:

	1	2	3
sing.	dəyɛ	wəyɛ	nəyɛ
plur.	meyɛ(excl.)	məyɛ	neyɛ
	eyɛ (incl.)		

No distinction between dual and plural is present with them, though subject markers of the verb have this distinction. The possessive pronouns are: da, wa, na (singular); me, (e), ma, na (plural).

The basic word order in the verbal sentence is subject-object-verb.

2.6.2.2.14.1.2. *Nafri*

Nafri is spoken in one village on the southern shore of Yotefa Bay. The number of speakers is not known. The only data on hand is a list of Anceaux' collection. The cognation percentage with Sentani is about 60%.

2.6.2.2.14.1.3. *Tanah Merah*

Tanah Merah is spoken by about 3,200 people living on the north coast to the east and west of Tanah Merah Bay. There are three dialects, Yakari, in the west, Təpəra in the middle, and Yawona in the east. The only data on hand are a wordlist of Anceaux' collection, and a wordlist and some notes collected by the present writer.

The following pronouns have been noted:

	1	2	3
sing.	də	wə	nə
plur.	ɛ, ɛya	wɛya	ʔ

The possessive pronouns have a possessive marker -na: dəna, wana, nəna.

2.6.2.2.14.2. The Demta family-level Isolate

Demta is spoken in four villages on the north coast between Cape Kamdara and the Tanah Merah language area. The number of speakers is estimated at 700. A few Demta words can be found in Cowan 1957b; otherwise no language data have appeared in print. The classification of the language is based on a wordlist of Anceaux' collection. Demta shares 18%-19% cognates with the languages of the Sentani Family.

2.6.2.2.15. *THE NIMBORAN SUB-PHYLUM LEVEL FAMILY*

2.6.2.2.15.0. The languages of the Nimboran Family are found in the basin of the Ŋgremi River to the west of Lake Sentani, and also between the western tip of the lake and Tanah Merah Bay. There are five member languages: Mekwei, between the lake and Tanah Merah Bay; Kamtuk, between Lake Sentani and the Ŋgremi River; Gresik, opposite Kamtuk on the western side of the Ŋgremi River; Nimboran to the west of Gresik; and Kwansu on the northern bank of the Ŋgremi, north of Gresik. All these languages are closely related (cognation percentages range from 60% to 75%). The only relatively well known language in the family is Nimboran, studied by Anceaux who published a detailed phonology and morphology (1965). Some lexical data in Nimboran can further be found in Cowan 1957b, and in the now dated publication of Schneider (1928). For the other languages in the family the only data at hand are wordlists of Anceaux' collection.

The number of speakers of Nimboran is about 3,000; no figures are available for the other languages.

2.6.2.2.15.1. Nimboran

The sound system of Nimboran contains the following consonant and vowel phonemes: p [p, Φ], t [t, t^y, $ṭ^y$], k, b [b, b^m], d [d, d^y], g, m, n, ŋ, r [ř, $ř^y$, $ř^w$], s [s, s^y], h [h, $n̥$, $ŋ̊$]; i, e [e, ə, ɛ], a [a, ɑ], y [ɨ], o [ɤ, o, ɔ], u.

The language is non-tonal; stress is phonemic.

Verbs take almost exclusively suffixes; they mark object, position, aspect, tense, and subject (in this order), and mode. A remarkable feature of the Nimboran verbs is that the place where the action takes place, or the direction in which the action takes place, is always explicitly identified by a separate marker. Thus:
ŋgua-k-u (verb root-tense-subject) *I bit (it) here*;
ŋgua-ba-k-u *I bit (it) above*; ŋgua- a-k-u *I bit (it) below*;
ŋgua-sa-k-u *I bit there*; ŋgua-na-k-u *I bit far away*; prib-be-d-u *I will throw from here to above*; prip-se-d-u *I will throw from here to there*; prip-san-d-u *I will throw from there to here*, etc.
With an object: prib-re-be-d-u *I will throw him from here to up there.*

There is a category of verb forms consisting of a reduplicated root without suffixes occurring as sentence medial verbs indicating a purposive relation between clauses (*in order to...*).

A rudimentary masculine-feminine distinction is present in the marking of the person of the object with the verb.

Prefixing: only three verb roots can take a prefixed dual marker; otherwise no prefixes occur in the verb system.

Nouns do not take any affixes, except for a few kinship terms which always have a prefixed possessor-morpheme.

The pronouns do not distinguish systematically between singular and plural. They are ŋa *I, we*; ko *you*; no *he, she, it, they.*

There is one 'inclusive plural' pronoun io *you and me/we and you.* The pronouns take suffixes marking emphasis, possession, or direction.

2.6.2.2.16. *THE KAURE SUB-PHYLUM-LEVEL STOCK*

The languages of the Kaure Stock occupy the hilly country in the east of the Lake Plain, between the Tolu and Nawa Rivers. The total number of speakers is estimated to exceed 2,000. The stock has three known members: The Kaure Family, the Sause family-level Isolate, and the Kapori family-level Isolate. The classification is very tentative, as it is based on short wordlists only.

The Kaure Family has two member languages: Narau and Kaure. They take up the central part of the stock's territory. In the north, near the mission station of Lereh, and close to the Uria border, Sause is located. Kapori is spoken at a location called Pagai on the north bank of the Idenburg River. A wordlist of Kaure has been published in Voorhoeve 1971.

Outside the stock, the closest relative of the Kaure language seems to be Kwerba, of the Dani-Kwerba Stock, but the position of the stock within the TNGP will remain obscure till more data have become available.

2.6.2.2.17. *SUB-PHYLUM-LEVEL ISOLATES*

There are still four languages within the TNGP which on the basis of our present knowledge cannot be included in any of the known stocks. Very little is known of these languages, and at present little more can be done than enumerate them. They are:

Molof, spoken on the south bank of the Pai River just west of Seŋgi (see 2.6.2.2.11.2.1.3. above) by about 200 people.

Usku, spoken by a small group of people living south of the Pauwasi River to the west of Dubu (see 2.6.2.2.12. above).

Tofamna, spoken by an unknown number of people living near the Nawa River, to the east of Usku.

Wordlists in these three languages have been published in Voorhoeve 1971.

Morwap (formerly called Sawa, or Tabu) is spoken by a few hundred people living in five villages at some distance south-west of the Awyi language area (see 2.11.2.2.1. above). A wordlist, and a few grammatical notes on this language can be found in Voorhoeve 1971.

A tentative analysis of the sound system yielded thirteen consonant and eight vowel phonemes: p, t, k, b [b, β], g, m, n, ŋ, f [p^f, f], s [^ts, s], w, y, l [l, ř, d]; i, e, ɛ, a, ɔ, o, u, and ə. Nasalization of vowels occurs and seems to be contrastive. Verbs take suffixes; the word order in the verbal sentence is subject-object-verb.

2.6.2.3. NEW MEMBERS OF THE TRANS-NEW GUINEA PHYLUM

2.6.2.3.0. This part deals with a number of languages which hitherto had escaped classification or had been classified as members of the West Papuan Phylum (WPP). They are the languages of the Mairasi-Tanah Merah Stock, the West Bomberai Stock, the South Bird's Head (or Vogelkop) Sub-Phylum, and the Mor stock-level Isolate. The present classification of these languages rests mainly on lexical evidence furnished by Anceaux' lists. Unfortunately these wordlists are almost the sole source of information on the languages and very little can therefore be said about their grammatical structure.

2.6.2.3.1. *THE MAIRASI-TANAH MERAH STOCK*

2.6.2.3.1.0. The members of this stock are found in the 'neck' of the Bird's Head (Vogelkop) and in the north of the Bomberai Peninsula. They are the Mairasi Family and the Tanah Merah family-level Isolate. The case for uniting the two families into one stock within the TNGP will be argued after the individual languages have been discussed.

2.6.2.3.1.1. The Mairasi Family

The Mairasi Family occupies the main part of the neck of the Bird's Head between Etna Bay and Kamrau Bay. Although the territory of the family is well defined it is not known exactly how many languages are spoken in the area. The wordlists on hand all come from the southern and western parts of the region. They show the presence of two closely related languages, Semimi in the south-east and Mairasi in the west. The two languages share more than 70% cognates; the total number of speakers probably does not exceed 3,000. Mairasi has in earlier publications also been called Faranjao; an earlier name for Semimi is Etna Bay.

Very little information on the languages has been published. Some short notes on Mairasi are given in Cowan 1953; Anceaux 1958 contains some general information on Mairasi and Semimi, and a short comparative wordlist of the Bomberai Peninsula languages, including Mairasi and Semimi. Further lexical data are presented in Greenberg 1971.

Mairasi and Semimi appear to have a suffixing verb morphology, as is shown by such verb forms as Mairasi oso-ano *walk*, ufw-ano *swim*, Semimi tevi-kano *lie down*, oso-kano *walk*. However, two verbs, *give* and *see*, possibly contain prefixes t-, and n-: *give* Mairasi nomboi, tomnai, ofnai, nomdefjana; Semimi tomowei; *see* Mairasi nendara, tadyara, tonom-ano, otomo; Semimi nodombe, nandome.[29]

This is strongly reminiscent of some suffixing languages within the TNGP which have a few verbs that take object prefixes, especially Suki which displays this characteristic in exactly the same verbs (see 2.6.2.2.1.1.).

With the personal pronouns, three persons are distinguished in singular and plural, and an exclusive-inclusive distinction is found in the first person plural:

	Semimi			Mairasi		
	1	2	3	1	2	3
sing.	omo	nemi	yeni	omo	neme	nina, inai
plur.	eme(incl.) etumaka(excl.)	keme	nengi	eme(excl.) etmaya(incl.)	keme	ni?i

Possessive prefixes: many names of body parts show a possessive prefix n-, ne-, interpreted by Cowan (1953) and Anceaux (1958) as the 2nd person singular *your*. Greenberg (1971, p.821) notes that in Mairasi a 2nd person singular possessive prefix ka- has been recorded and, in his list of etymologies, interprets n-, ne- as the 1st person singular *my*.

2.6.2.3.1.2. Tanah Merah

Tanah Merah is spoken by about 500 people living on the north coast of the Bomberai Peninsula. There are two dialects, Tanah Merah and Yago, the latter spoken in only one village. The closest relatives of Tanah Merah seem to be Mairasi and Semimi, with which it shares about 19% cognates.

A few general data on the language can be found in Anceaux' (1958) survey of the Bomberai Peninsula languages. Anceaux notes that the language seems to have an intricate morphology and that the verb varies for tense. The lexical data contained in the wordlists are unclear on this point. Verb forms do not show any unambiguous cases of affixation and only in some names of body parts is it possible to discern a possessive prefix (presumably of the 2nd person singular) k-, ka-.

The personal pronouns show three persons in singular and plural, and an exclusive-inclusive distinction in the first person plural:

	1	2	3
sing.	nafea	kafea	fonera, vata[30]
plur.	kigokomaka(incl.) kiria (excl.)	kifia	funurure, vanera[30]

2.6.2.3.1.3. Classification

The Mairasi Family and Tanah Merah are classified here as members of the TNGP. The Tanah Merah language has not been classified before, but there have been two earlier attempts to assign to the languages of the Mairasi Family a place in an overall classification and both included them in the West Papuan Phylum (see part 2.10. in this volume) although to different parts of it: Wurm (1971) provisionally included Mairasi and Semimi in the Bomberai Stock of the West Papuan Phylum on the basis of the evidence found in the very short comparative wordlist of ten items in Anceaux 1958. At the same time Greenberg (1971) included the two languages in the eastern subgroup of his Western Group (basically the West Papuan Phylum) together with languages which in this chapter and in chapter 2.14.3. have been classified as members of the South Bird's

Head Stock (TNGP) and East Bird's Head phylum-level Stock respectively.

Greenberg's classification is based on an examination of the same materials as were available to the present writer, i.e. the wordlists collected by J.C. Anceaux. It seems therefore worthwhile to review some of the evidence he presents and to contrast it with the evidence which led to the altogether different classification given in this chapter.

Regarding the affiliation of Mairasi and Semimi to the other languages of the eastern subgroup, Greenberg notes that they seem most closely related to Mantion and Manikion[31] to the north-west of Mairasi, but separated from it by intrusive Austronesian languages. In support he presents the following etymologies:

1. *cold*: Mairasi argiri, arjeri - Manikion tukurid
2. *dog*: Mairasi asi, Semimi ansi - Manikion, Mantion (m)ihi
3. *dry*: Mairasi Φoa - Mantion efi
4. *eat*: Mairasi oro - Manikion b-it
5. *go away*: Mairasi itai! - Mantion b-eta! Manikion b-ita!
6. *stand*: Mairasi isai - Manikion esa
7. *tail*: Semimi nasuru - Manikion, Mantion (me)sera

To these could be added:

8. *to fly*: Semimi fi, Mairasi wene - Manikion, Mantion ohu (Greenberg links fi, wene with Meax ofu, Meniŋgo ofo which are cognates of ohu)
9. *foot*: Mairasi (ne)ʔoro - Mankion, Mantion (m)ohora.

The first of the etymologies looks possible provided one assumes that Mairasi r corresponds to Manikion t in some cases, and to Manikion r in others. More likely cognates however are found in the languages of the central highlands: Ekagi kinita, Moni kini, Dem agilye, Mianmin gir, Telefol diil, all languages which belong to the TNGP.

No. 2 could be valid. Supporting evidence is Meax (m)es, but its validity depends on the correctness of the analysis of the initial m in mihi, mes as a prefix, and this is by no means certain (see 2.14.3.1.1. in this volume).

No. 3 is not convincing because of the shortness of the word involved.

No. 4 is not valid. The verb stem *eat*, both in Semimi and in Mairasi is nenem.

No. 5 seems to be valid, as is No. 6.

No. 7 is not valid. Semimi nasuru means *hair*; *tail* in this language is naba (Mairasi navatu).

No. 8 is open to doubt. Semimi fi could be a loan from the neighbouring Kamoro language which has pi. Wene has probable cognates in the Ok and Awyu languages of the Central and South New Guinea Stock: Kati won wene-, Kaeti berene, but in the same families we find forms with back vowels: Telefol fululu, Wambon ururuk, Pisa burũ. Similar forms are found in many languages in West New Guinea, e.g. Dani put-luk, Ekagi wuduwudu, Baham poro, Iha buru, Brat fru. Ohu, ofu, and ofo seem to belong to this group of cognates rather than with Mairasi wene etc., but it seems possible that the forms of both series are all cognate.

No. 9 is valid subject to the same proviso as No. 2. The Mairasi and Manikion/Mantion forms then belong to a large series of cognates which includes words from many TNGP languages, e.g. Sentani Family oro, oto, Ok Family kono, kondo, Dani okut, akut, Awyu Family kito, kondok, Kolopom Family kura, tur, Semimi okoranda, Karas kor, Baham kweit, South Bird's Head languages otore, otora, eʔoru; Madik gwes, Karon kwes, Meax (m)ukueda.

Thus we see that Mairasi and Manikion share at most six cognates in the above list, and that three of these can also be used to argue for an affiliation with TNGP languages.

The languages in the centre, north, and west of the Bird's Head show only a sprinkling of probable cognates with Mairasi and Semimi; the maximum is 4%.

Greenberg further notes the resemblance of the second person singular pronouns in Mairasi and Semimi (nemi, neme) to those in the languages of the central, north, and west Bird's Head (nan, nin, nen, nyo, nuo), but in Manikion/Mantion where this could be meaningful in view of the supporting lexical evidence, the 2nd person singular pronouns have initial b. Mairasi and Semimi have 3rd person pronouns in n, a feature shared by a number of Bird's Head languages, but the forms are generally too short to carry much weight as evidence of genetic relationship. Only the 3rd person pronouns in Mantion/Manikion show enough resemblance to the Mairasi and Semimi forms to be counted as possible cognates:

	Semimi	Mairasi	Mantion	Manikion
he	yeni	nina	eni	ena
they	neŋgi	niʔi	reni	reŋgafa

Mairasi and Mantion/Manikion are now separated by a block of Austronesian languages, but it is likely that at some point in the past they were neighbours and that at least part of the resemblances noted have to be attributed to borrowing.

Let us now turn to the evidence on which the present classification is based. First the structural evidence: what little is known about

Mairasi and Semimi verb morphology seems to tie in with what is known of TNGP languages. The personal pronoun system is aberrant, but if Greenberg's analysis is right, we find TNGP forms as possessive prefixes 1st, 2nd person singular. Tanah Merah on the other hand has personal pronouns which follow the TNGP pattern.[32]

The lexical evidence which ties the languages of the stock in with the TNGP is clearest when they are compared with the highland languages to the east. Of these, Ekagi shows the highest percentage of probable cognates but here as with Mantion/Manikion one can expect influence of borrowing. The cognation percentages with Ekagi, Moni, Dani, Telefol, and Kati are:

	Ekagi	Moni	Dani	Telefol	Kati
Semimi	16	11	9	10	9
Mairasi	15	11	8	10	10
Tanah Merah	10	10	9	8	9

The full evidence, including the etymologies linking Tanah Merah with the Mairasi Family, will now be given. Abbreviations of language names are given in capitals, as follows: TM Tanah Merah, MA Mairasi, SE Semimi, EK Ekagi, MO Moni, DA Dani, TF Telefol, KA Kati.

1. *belly* : SE vuru-kara, (MA vuru), EK puto *entrails*, DA -aput, TF mat. MA vuru is found only in one list; other lists have tuara or fa (Greenberg -we). TF mat is supported by Bimin muut.
2. *big* : TM tibi, MO tope
3. *bird* : TM finanaburu, penaburu; EK bedo, MO bega. Baham, of the West Bomberai Stock, has parubaru. The etymology rests upon the assumption that the long words are compounds: finana-buru, pena-buru, paru-baru and that the first constituent is cognate with the EK and MO forms.
4. *blood* : MA isere, TF is-ak. Supporting evidence in Kamoro ete, Asmat es, ese, Tamagario yet, Ndom eth. TF -ak is a bound form of ok *water, fluid.*
5. *bone* : TM naso, MA, SE natura
6. *breast* : SE yoku, MA joku, DA eðak, elak

7. *burn* (v) : SE yow, EK yow
8. *cold* : MA argiri, arjeri; EK kinita, MO kini, TF diil, KA ŋgit (see also Greenberg's etymologies above).
9. *come* : TM amo, MA amui, EK mei, MO me, DA eme, KA mene
10. *dry* : SE keŋge, MA eŋge, EK geegee. The majority of MA lists has eŋge; two have foa (see Greenberg's list) and two give both foa and eŋge.
11. *ear* : TM (k)afuni, MA ovira, SE ofira
12. *earth* : SE makoro, EK magi, MO mayi, TF bakan, KA ambukin:
13. *eat* : SE, MA nenem, EK naio, MO nundia, DA naman, TF in, KA ane.
14. *egg* : SE ate, MA ete, DA gen, egen (?); TM no perhaps belongs to the same series of cognates as Baham un, Iha wun, Ok Family win, un, Goliath Family won, wana.
15. *eye* : TM -bita, MA -mbutu, SE -mbiato, EK peka
16. *fire* : MA ivoro, SE iboro, EK bodia, KA amot
17. *fly* (v) : TM fena, MA wene, SE fi, EK wuduwudu (?), MO puya (?), TF fululu (?), KA won wene. See the notes on Greenberg's etymologies.
18. *foot* : MA ʔoro, oʔoro; SE okoranda, DA -akut, -okut, KA kondo. See the notes on Greenberg's etymologies.
19. *fruit* : MA atu, SE katu, EK uta, MO uga (?)
20. *grease* : SE natomo, MO tomo
21. *hair* : MA, SE (n)asuru, TM (n)isa, EK iso, DA esi, asi, otuk
22. *hand* : SE eva-kanda, ova-kara; MA orwa-tara, (n)ef-sa; TM (ka)-ta, EK gane, MO hane, TF teeŋ
23. *I* : TM nafea, EK ani, MO andi, DA an, TF na, KA ne
24. *mouth* : TM abo, EK ebe, MO bai *lip, mouth,* DA abe, TF boon *lip, mouth*; SE moŋgoro, MA (ne)mʔara, MO mangaga, TF maŋkat, KA moŋgot
25. *man* : SE tatakovo, MA ofo, tatovo, taturobu; TM maopa, maupa
26. *meat* : SE sase, MA sasi, TM -nate, neti (?)

27. *nail* : TM (ka)tana-gisiri, (ka)teisina; SE kasa-fura, MA (one list) kasa-bura. Other forms, found in the Bomberai Peninsula are Mor idar-ges, Asienara kasaru.

28. *name* : TM nigia, -inigi (neighbouring Mor has inagenena), MA negwata, SE nawata

29. *neck* : TM egorage, igeroso; MA oŋgo, oŋgarugu, SE goŋgorovu, EK ogo, MO ogo, ogo tagi

30. *nose* : SE, MA embi, MO amu (cognates in several languages of the Central and South New Guinea Stock: Asmat mi, Samo mini, Beami mi)

31. *one* : SE tana, MA taŋgau, MO hago

32. *path* : TM aetu, MA ae, ite, SE kae, EK ita

33. *rain* : TM moa, MA jamu, SE yamu

34. *red* : TM suri, MA susu

35. *sand* : SE, MA firi, EK ii (?), DA bini, bili

36. *see* : SE n-andome, n-odombe; MA otomo, onom-; EK doo, domakai; TF utam

37. *skin* : SE kakia, MA ai?a, TM katane, EK kado, MO ara, DA katdo, TF kaal, KA kat (Gogodala: kaka).

38. *stand* : SE jambiri, MA yambiri, TM minifera, DA mel-asin (?)

39. *stone* : TM kenade, MO ŋgela, DA kelek, helep

40. *sun* : SE, MA tende, EK tani, MO dani, TF ataan, KA aton

41. *spittle* : TM tofe-genete, SE tuafa

42. *tail* : TM nifoda, MA navatu, SE naba

43. *swim* : SE wai, TM wene

44. *tongue* : TM kasiesana, gasesani; MA (n)esafi?a, SE (n)savia could perhaps be compounds containing a morpheme esa, cognate with EK eta, Taruŋgare (Geelvink Bay Phylum) isa.

45. *tooth* : SE, MA erasi; EK ero, ego

46. *wood* : TM awo, SE ivere, MA iwo, iwere

47. *you*(sing.) : TM kafea, EK aki, MO -ka-, DA kat, TF kub, KA tup

48. *back of body* : TM (k)abuto-naso, DA abot (TM naso = *bone*)
49. *pig* : SE pembe, MA bembe, DA wam (Goliath Family: pham)
50. *housefly* : MA matambura, MO tambuni
51. *walk* : TM eiutu, MA oso-, usa-, astɔ; SE oso
52. *wet* : TM toretorere, MA atoro, SE kekatoro
53. *you*(plur.) : TM kifia, MA ʔeme, SE keme, EK ikii, MO igi, DA kit, TF ip, KA kip, tip

2.6.2.3.1.4. Conclusion

The lexical evidence presented above definitely warrants inclusion of the stock into the TNGP. What little there is of structural evidence is ambiguous and it seems that in their pronominal systems, Mairasi and Semimi harbour elements foreign to the TNGP. This may be due to early contact between the Mairasi-Semimi proto-language and languages of the east Bird's Head. The fact that a few cognate series run through many languages of the TNGP as well as the WPP still needs explanation.

2.6.2.3.2. *THE MOR STOCK-LEVEL ISOLATE*

Mor is the language spoken in the village of Mor, in the north of the Bomberai Peninsula between the Iha and Tanah Merah languages. In 1958 it was spoken by only sixty-odd people. Anceaux (1958) mentions that the language has a very intricate verbal system but apparently without tenses.

The pronouns are:

	1	2	3
sing.	naya	aya	mena
plur.	nea	omase	morimene

The system is similar to the pronoun system found in the languages of the South Bird's Head Stock in that the pronouns 1st person sing./plur. and 2nd person sing. have corresponding forms in those languages.

Mor shares 9%-12% cognates with other languages in the Bomberai Peninsula. These percentages probably are inflated by borrowing, but since counter-indications are almost completely lacking, Mor has been provisionally classified as a member of the TNGP.

2.6.2.3.3. *THE WEST BOMBERAI STOCK (WB STOCK)*

2.6.2.3.3.0. The languages of this stock are found in the north-western part of the Bomberai Peninsula and on the small island of Karas to the west of the peninsula. There are two sub-groups, the West Bomberai Family (± 6,000 speakers) and the Karas family-level Isolate (± 200 speakers), with an average cognation percentage of 23%. Cowan (1960) classified the languages of the stock as members of his West Papuan Phylum. A re-examination of the data however has led to their inclusion in the TNGP. More will be said about this after the individual languages have been surveyed.

2.6.2.3.3.1. The West Bomberai Family (WB Family)

2.6.2.3.3.1.0. The family consists of two languages, Iha and Baham which share approximately 60% cognates. Iha is spoken by nearly 5,500 people living in the north-western extremity of the peninsula. The language has several dialects, but details are not known. The coastal dialect is called Kapaur and it was under this name that the language became first known (e.g. Cocq d'Armandville 1903). Baham, also known as Patimuni, is spoken by about 450 people living to the east of the Iha territory. Some notes on Iha and Baham can be found in Cowan 1953, 1960, and in Anceaux 1958. For Iha the present writer had at his disposal a short grammar and a 600-item wordlist in manuscript written by the Dutch Catholic missionary J. Coenen in 1954.

2.6.2.3.3.1.1. *Iha*

The sound system contains the following vowels and consonants: i, e, a, o, u, ə; p, t, k, (č), kp; b, d, g, j, gb; m, n, ŋ, (ñ); (f), x, h; w, r, (l). The phonemic status of the bracketed sounds is uncertain. kp and gb are labiovelar consonants.
Suprasegmentals: the language seems to be non-tonal. Some words carry stress on the last syllable, others on the penultimate; stress may therefore be phonemic.

Morphological processes described by Coenen are prefixing and suffixing, duplication and reduplication.

The nouns are subdivided into seven classes manifested by concord in adjectives, deictics, and numerals, which take prefixed class markers: ix- *class of fruit,* kix- *class of everything connected with the house,* pan- *flat objects,* mur- *wooden objects,* tiem- *rifles and a few other (modern) objects,* du, ju *animate,* kwe *inanimate.* Semantically these

classes seem to overlap extensively and one would expect multiple class membership of nouns. Unfortunately further information is lacking.

Nouns indicate plural number by duplication or reduplication, or alternatively by adding a pluralizing suffix: je *bird*, jeje *birds*; tor *woman*, totor *women*; heir *fish*, heir-pewe *fish* (plur.).

The personal pronouns are:

	1	2	3
sing.	on	ko	mi
plur.	in (incl.) bi (excl.)	ki	mi(a)

They have emphatic forms marked by a suffix -ke/ge: onke, inke, bige, koge, kige, mige. Bound forms of the non-emphatic pronouns occur as possessive suffixes with nouns: adop-on, adop-ko *my, your tree* etc.

The verb takes suffixes and varies for tense, person/number, and mode. Tenses are: present, near past (what happened today), medial past (what happened yesterday), far past (what happened before yesterday), near future (what is going to happen today), and future (what is going to happen after today). These future forms are at the same time mode forms, expressing a desire or intention on the part of the speaker. Examples are: wex-w-edob *we are going*, weh-Ø-ewob *we just went*, woh-omb-ob *we went (yesterday)*, woh-onoŋ-ob *we went (before yesterday)*, weh-enet-ep *we want to go (today)*, weh-eni-ep *we want to go (after today)*.

There is no information on sentence medial forms. The way in which habitual action is marked is interesting. It is indicated by duplication of the verb root, followed by a separate aspect marker: hur-hur gom *habitually to go down*. The same formation is found in Kimaghama of the Kolopom Island stock-level Family (see 2.6.2.2.4.) and this group as we shall see seems to be one of the closest relatives of the West Bomberai Stock.

The word order in a verbal sentence is subject-object-indirect object-adjuncts of place and time-verb, as in:

on were-rik na-mada wehat Pakpak-na redredage here-noŋ-on
I tree-two my-child for Fakfak-in morning buy-"past"*-I*
In the morning I bought two trees in Fakfak for my child.

2.6.2.3.3.1.2. *Baham*

The sound system is very similar to that of Iha. The main difference is that h seems to be an inter-vocalic allophone of s, a phoneme missing in Iha. (Baham s corresponds regularly to Iha h). č was not found in the data, and the phonemic status of ñ is uncertain, as in Iha.

The personal pronouns are:

	1	2	3
sing.	andu	tau	uŋgea
plur.	undu	kuyu	kuyu kintian (?)

Verbs seem to take suffixes; further grammatical information is lacking.

2.6.2.3.3.2. The Karas family-level Isolate

Karas is spoken in two small villages on Karas island off the west coast of the Bomberai Peninsula. The number of speakers may be about 200. Its sound system seems to be the same as the Baham system except for the absence of labiovelar stops (which can easily have escaped the attention of the wordlist compilers) and the presence of l, which could be an allophone of r.

The personal pronouns are:

	1	2	3
sing.	an	ka(me)	ma(me)
plur.	pir (excl.) pramiŋan (incl.)	kiumene	mubameir (?)

Verbs: the only affix clearly discernible in the verb forms in the wordlists is the imperative suffix -et.

2.6.2.3.3.3. Classification

The first classification of the languages of the West Bomberai Stock has been as members of the West Papuan Phylum, the large group of related languages established by Cowan in a series of articles beginning in 1957 (1957a, 1958, 1960, 1963, 1965). On the New Guinea mainland this phylum was divided into two structurally different subgroups: a group of prefixing languages found in the whole of the Bird's Head except in the lowlands of its southern coast, and a group of suffixing languages along the south coast and in the Bomberai Peninsula.

Within the group of prefixing languages one could discern three further subgroups according to the characteristic initial consonants of the first and second person singular pronouns: a western group with t, n in the 1st and 2nd person singular respectively, a northern group with n and n, and an eastern group with t and b.

Within the group of suffixing languages one could distinguish a group with n and k in the 1st and 2nd person singular respectively (our West Bomberai Stock), and a group with n in the 1st person singular and in the 2nd person singular an initial vowel (our South Bird's Head Stock).

Cowan's argument for uniting these languages into one group was based on the fact that they showed more lexical correspondences than could be attributed to pure chance (see Cowan 1957a, b for the discussion of his lexicostatistical method). For the Bomberai languages he showed that they shared a total of fifteen cognates with languages in the Bird's Head; nine of these were found in the group of prefixing languages and five of these were common to Moi (of his Western Group) and Iha. For Cowan this number was more than sufficient to rule out chance.

The renewed examination of the data does not refute Cowan's conclusion that chance must be ruled out, but it casts doubt on the validity of his interpretation of this fact as proof of genetic relationship. A lexicostatistical comparison of the West Bomberai Stock languages with most of the known languages in West New Guinea reveals that they show much higher cognation percentages with the languages of the TNGP than with the prefixing languages of the WPP. Their cognation percentages with the South Bird's Head languages are on a par with their cognation percentages with the TNGP languages - but, as we shall see, the South Bird's Head languages are members of the TNGP, not the WPP.

The chart on the following page gives a survey of the average cognation percentages found when comparing the WB Stock with other language groups, both in the WPP and in the TNGP. The first column gives the name of the group; the second the number of languages in that group compared with languages in the WB Stock; the third the average cognation percentage, and the last column gives the lowest and highest cognation percentage found.

The cognation percentages with the TNGP languages are on the whole sufficiently high to postulate a phylum-level relationship, i.e. to warrant the inclusion of the WB Stock in the TNGP. This is generally supported by the grammatical structure of Iha: the 1st and 2nd person personal pronouns have the basic TNGP forms and the verb inflection conforms to the pattern found in the majority of TNGP languages (see chapters 2.3.3. and 2.5.2.3. in this volume). Only the seven-class system of the nouns would be unusual for a TNGP language.

Chart: West Bomberai Stock compared with other groups in West New Guinea.

	Name of group/language	number of languages	average c.p.	range of c.p.
TNGP	Kolopom Family	3	10.6	8-14
	Ok Family	2[a]	10.1	6-14
	Ekagi-Moni Family	2	9.8	8-13
	Mairasi-Tanah Merah Family	3	9.1	6-13
	Dani	1	9	7-10
	Awyu Family	2[a]	8.1	6-11
	Asmat-Kamoro Family	2[a]	8	5-10
	Sentani Family	3	7.4	5-10
	Marind	1[a]	4.6	4-5
	South Bird's Head Stock	12	10.1	6-14
WPP	West Bird's Head Family	6	6	3-9
	North Bird's Head Family	2	4	1-7
	Central Bird's Head Family	2	4.8	3-6
	Amberbaken Family	1[b]	4.3	4-5
	Borai-Hattam Family[c]	2	2.6	2-3
	East Bird's Head Stock[c]	3	less than 1	0-1

Notes to chart:

a: Language families with several member languages have been represented by only two of their languages: Ok by Telefol and Kati; Awyu by Kaeti and Aghu; Asmat-Kamoro by Asmat and Iria-Asienara. Marind was not originally included but later added to round off the picture.

b: Kebar, the second language in this family is not included because of the shortness of the available wordlist.

c: Borai and Hattam were not included in Cowan's West Papuan Phylum because at that time no data were available in these languages. The present writer included them in one phylum with the languages in the north, west and central Bird's Head (see 2.10.2.4.); Cowan's Eastern Group, here called East Bird's Head Stock, however has been reclassified as a separate phylum (see 2.14.3.1.).

The percentages with Cowan's WPP languages fall into three groups:

1. Those with the South Bird's Head (SBH) Stock languages. They are of the same order as those with the TNGP languages. In the next section we shall see that there are good grounds to include this stock in the TNGP.

2. Those with the Western, Northern, and Central Bird's Head Families. The languages of these families, which together form the Bird's Head Super-Stock (see chapter 2.10.2.2.) have cognation percentages with the WB Stock languages which fall partly within phylum-level range and are generally too high to be attributed to chance, as was already pointed out by Cowan (1960). However, the most likely alternative if chance has to be ruled out is not genetic relationship but borrowing, by languages of the Super-Stock from languages of the South Bird's Head Stock, of vocabulary items having cognates in the languages of the West Bomberai Stock. The BH Super-Stock and the WB Stock share a total of 22 cognates. Of these, 11 are also shared by languages of the SBH Stock. If they are discounted as possible loans, then the highest number of cognates shared by a language of the WB Stock and one of the Super-Stock is only 4.

In the next section we shall see that there is fair reason to assume such a borrowing relationship between the SBH Stock and the BH Super-Stock. On the other hand, a few cognates shared exclusively by languages of the WB Stock and Moi and Karon Pantai on the west and north-west coast of the Bird's Head suggest that there has been direct contact between the languages, possibly via trade or slave expeditions by sea.[34]

3. The percentages with the Amberbaken and Borai-Hattam families, and with the East Bird's Head Stock. They are below the phylum-level and do not present problems for the delineation of the TNGP and WPP.

2.6.2.3.4. *THE SOUTH BIRD'S HEAD SUB-PHYLUM-LEVEL STOCK (SBH STOCK)*

2.6.2.3.4.0. The languages belonging to this stock are found along the south coast of the Bird's Head, on the north coast of the Bomberai Peninsula and on the small island of Duriankere in the southern entrance of Seleh Strait. There are three families, from east to west: the South Bird's Head Family, the Inanwatan Family, and the Konda-Yahadian Family. The average cognation percentages between the families are:

SBH Family	:	Inanwatan Family	22%	range: 16-32
SBH Family	:	Konda-Yahadian Family	16%	range: 13-18
Inanwatan Family:		Konda-Yahadian Family	19%	range: 17-19

The total number of speakers of languages of the stock is estimated at 9,000-odd; about 5,000 of these speak languages belonging to the SBH Family. Further details are not available, except for the Barau language.

2.6.2.3.4.1. The South Bird's Head Family (SBH Family)

The family has six member languages: Barau, Arandai, Tarof, Kasuweri, Puragi, and Kampong Baru. They group into three sub-families: an eastern, with Barau and Arandai, a central with Tarof and Kasuweri, and a western with Puragi and Kampong Baru. Barau and Arandai share 65% cognates; the languages of the central sub-family form a close-knit group, sharing well over 70% cognates. Puragi and Kampong Baru share over 50% cognates. The average cognation percentages between the groups is 55% between east and central, and about 40% between the east and west, and central and west.

Some notes on Barau have been published by Anceaux (1958). A few notes on Puragi and Kampong Baru can be found in Cowan 1953; additional lexical data in these two languages appeared in his articles of 1957a, 1960, and 1963.

Barau is the only member of the family situated in the Bomberai Peninsula. It is spoken by over 150 people. Anceaux reports that it has an intricate verb morphology, but without indication of tense. A striking feature of the sound system is a strong bilabial fricative; the accent is a high-pitch accent.

Arandai is spoken in Arandai village on the Sebyar River.

Tarof is spoken in the coastal village of the same name west of the mouth of the Kamundan River.

Kasuweri is spoken in the coastal village of this name, west of Tarof, and in the village of Negeri Besar about ten miles inland from Kasuweri. There are small dialectal differences between the two villages.

Puragi is the language of Puragi village on the Metamani River.

Kampong Baru is spoken in the village Kampong Baru, north of Puragi on the Kais River.

There is almost no grammatical information on all these languages. They have personal pronouns in the 1st, 2nd, and 3rd person singular and plural, and all languages except Barau have an inclusive-exclusive distinction in the 1st person plural. Many of the forms listed have a suffix **-ga**, **-ge**, or **-go** perhaps marking them as emphatic or absolute. The chart below gives a survey of the personal pronouns in the six languages.

	Barau	Arandai	Tarof	Kasuweri	Puragi	Kampong Baru
1 sing.	nao	neŋtigo	neiga	neiga	nedi	neri
1 plur. (incl.)	neri	yeŋga	iga	iga	ididi	ndi
1 plur. (excl.)		indigo	idi	nidi	nididi	mi
2 sing.	ari	andigo	aiga	aiga	edi	eri
2 plur.	eri	umogo	edi	eiga	ididi	ideri
3 sing.	?	umaige	nigera	nigera	nide[1]	nde
3 plur.	ari	nendegomo	nigaomo	eiga	nidau	nde

[1]Puragi seems to have a two-gender distinction in the 3rd person singular: nide *he*, nindo *she*, but Cowan (1953) has doubts about the reliability of this bit of information.

Names of body parts take possessive prefixes, but not all of them have been identified. There are n- (1st person singular), w- (3rd person singular in Puragi, Kampong Baru), m- (perhaps an allomorph of w-); y- or j-, and zero (unidentified).

Verbs: the majority of the verb forms in the wordlists contain a verb root followed by one or perhaps more suffixes - the paucity of data does not allow a detailed morphological analysis of the forms. Only two of the twelve verbs listed seem to have prefixes, possibly marking the subject. They are the verbs *give* and *walk*. Some examples: *see* Barau ete-pe (imperative form), ete-riwo, Tarof ete-ai, Kasuweri ete-paena, ete-pei; *walk* Barau n-otu-awe, Arandai oto-tai, Kasuweri n-ata, w-atae, n-oto-araba; *give* Tarof y-abe, Kasuweri n-abe, m-abe. Note the formal similarity of the verbal prefixes to the possessive prefixes.

In verbal sentences the object precedes the verb. Cowan (1953) gives amongst others the following examples: (Kampong Baru) wa-kabo ma siko-we *chop his head off!* (the function of ma is not clear). (Puragi) bibia kao-weira *fry the fish!*

2.6.2.3.4.2. The Inanwatan Family

Two languages belong to the family: Inanwatan and Duriankere. They share 38% cognates.

Inanwatan is spoken in three villages, Inanwatan, Solowat, and Itigo, near the coast east of the Metamani River. There are small dialect differences between the villages.

Duriankere is spoken on the island of Duriankere in Seleh Strait.

Grammatical information is here, as in the SBH Family, restricted to the pronouns and a few verb forms. The pronouns of Inanwatan are very similar to those of the languages of the SBH Family; the Duriankere pronouns are aberrant in the first person plural. They are:

	Inanwatan	Duriankere
1 sing.	naiti	nani
1 plur.(incl.)	daiti	iotokodi
1 plur.(excl.)	niti	iganoa
2 sing.	aiti	ani
2 plur.	itire	eini
3 sing.	itigi	ani
3 plur.	itiga	sagan

Verbs can have suffixes as well as prefixes. The prefixes, probably subject markers, are: n/ne-, m-/me-, e-, nebe-, her-; n-/ne could be marker of the first person singular, m-/me- of the third person singular; the identification is only tentative. The other prefixes have not been identified. Some examples: *stand* Inanwatan idi-ra, idi-de, idi-rita; *come* Inanwatan mo-ra, mewo-rita, mowo-bi, Duriankere mo-na; *walk* Inanwatan me-se-rita, ne-se-be, se-ra, ne-se-rita; *cry* Inanwatan m-era-rita, era-be, n-era-sa, neb-eru-bido, w-ara-ritabi; *lie down* Inanwatan ne-ebare-rita, me-ebare-rita, e-ebare-ra.

2.6.2.3.4.3. The Konda-Yahadian Family

The family has two member languages, Konda and Yahadian, sharing 68% cognates. Cowan (1953) published some notes on the two languages, and further lexical data can be found in his later articles (1957a, 1960, 1963).

Konda is spoken on the lower Kaibus River.

Yahadian is spoken in two villages, Yahadian and Mugim near the mouth of the Kais River. Each village has its own dialect.

The personal pronouns 1st and 2nd person are similar to those found in the other languages of the stock, except for the 1st person plural pronoun in Konda which has an aberrant form, and no inclusive/exclusive distinction. The 3rd person forms are characterized by a bilabial consonant. All pronouns have a suffix (i)gi, perhaps similar in function to -ge, -ga, -go with the pronouns in the SBH Family. The list of pronouns is:

	Konda	Yahadian
1 sing.	neygi	nenegi
1 plur.	madigi	nanigi
2 sing.	egi	eregi
2 plur.	adigi	adigi
3 sing.	boigi	megigi
3 plur.	woigi	migi

Forms without -gi occur as possessive pronouns: Konda ne-wawo *my father*, e-wawo *your father*, migi-wawo *his father*; Yahadian nere dei *my father*, ere dei *your father*.

Verbs can have suffixes as well as prefixes, but here too it is impossible to go beyond this first observation because of the lack of data. Some examples are: *eat* Yahadian no, bera-no, ba-no, da-no, da-no-me; Konda da-no-menio; *give* Yahadian re-bunu, n-ere-mo; *swim* Yahadian hu-ta, a-hu,

huhu-rarome; Konda su-ro; *lie down* Yahadian ba-urun-ta, neba-urur-ta, na-rue; Konda na-re.

Cowan (1953) gives a few examples of short sentences in which the object precedes the verb: Yahadian bano a-tu-nu, Konda bano-cu-nu *fry fish!*

2.6.2.3.4.4. Classification

In the previous section it was shown that the West Bomberai Stock belongs to the TNGP rather than to the WPP as was posited by Cowan; both lexical and structural data support this view.

The fact that a considerable amount of cognates is shared by the languages of the WB Stock and the Bird's Head Super-Stock, while needing an explanation, does not endanger the new status of the WB Stock.

The SBH Stock is in a slightly different position vis-à-vis the WPP. Cowan (1957a) classified the then known languages of the SBH Stock (Puragi, Kampong Baru, Yahadian, and Konda) as members of his West Papuan Phylum, but, as with the WB Stock, a good case can be made for inclusion of the stock in the TNGP. The problem which is here much more acute than in the previous case is the relationship between the SBH Stock and the BH Super-Stock. Is it a borrowing relationship, or a genetic relationship, or perhaps both? These questions will be dealt with in some detail after the argument for inclusion of the SBH Stock in the TNGP has been presented.

The established TNGP languages show much higher cognation percentages with the SBH Stock than with Greenberg's "Western Group" (see 2.6.2.3.1.3.). The chart opposite contrasts the two groups of percentages; the TNGP languages included in the chart are the same as those in the chart in section 2.6.2.3.3.3. except for those of the Mairasi-Tanah Merah Family.

The percentages of the TPNG languages with the SBH Stock are of the same order as those which they share with the West Bomberai Stock (see the chart in section 2.6.2.3.3.3.). They are generally well above the lower limit of phylum-level relationships (5-6%), and seem to warrant the inclusion of the stock in the TNGP. In part, this finds support in what is known of the typological features of the languages of the stock. The characteristic pattern of the personal pronouns 1st and 2nd person is: initial n in 1st person, initial vowel in 2nd person; plural forms have vowels either more fronted or higher than those of the singular forms.

Chart: TNGP languages compared with languages of the SBH Stock and BH Super-Stock. Average cognation percentages and range of variation.

	South Bird's Head F.		Inanwatan F.		Konda-Yahadian F.		SBH Stock: total average	West Bird's Head F.		Central Bird's Head F.		North Bird's Head F.	
Ekagi-Moni F.	8.5	7-10	5.2	4-7	9.5	9-10	7.7%	3.7	3-5	4.5	3-6	3	3-4
Dani	9.2	8-11	5.5	3-8	6.5	6-7	7%	3.8	2-6	3.5	3-4	2	2
Ok F.	12.3	9-15	7.7	6-10	9	8-10	9.6%	3	1-5	5.7	4-8	3	2-4
Awyu F.	11.1	8-12	7.2	5-9	6.5	6-7	8.2%	2	0-5	3.2	2-4	1.5	1-2
Kolopom F.	10	6-15	8.5	5-11	9.5	8-11	9.3%	2.1	1-4	3.3	3-4	2.8	2-4
Marind	9.3	8-10	7.5	7-8	5	5	7.2%	1.6	0-3	3	3	1	1
Asmat-Kamoro F.	9.2	6-11	7.5	4-9	9.8	6-13	8.8%	1.4	0-4	2	0-4	0.5	0-1
Sentani F.	7.5	5-10	4.3	3-6	6.5	4-9	6.1%	2	0-4	3.5	1-6	3	1-5

This system is similar to the basic TNGP pattern na, ka, ni, ki, (see 2.3.3.2.), the difference being the absence of initial k in the 2nd person pronouns. Pronoun systems which have an initial vowel in one or both 2nd person forms are found in several languages in the lowlands of South-West New Guinea as well as in the western highlands: in Iria-Asienara, Kamoro, Asmat, Marind, Yaqay, Yelmek, Maklew, Kimaghama, Suki, Gogodala, Ekagi, Moni, and Uhunduni. Both types of pronoun systems appear to belong to the Trans-New Guinea Phylum.

However, the languages of the stock do not present such a uniform picture with regard to their verb morphology. The languages of the SBH Family seem to be predominantly suffixing, and only very weak evidence of prefixing is found (see above, 2.6.2.3.4.1.). On the other hand, the languages of the two other families yield a good measure of evidence that subject markers are prefixed to the verb stem whereas other markers are suffixed. Thus the Inanwatan and Konda-Yahadian families have in this respect much more in common with the BH Super-Stock languages, which prefix the subject marker to the verb, than with the TNGP languages, where this is uncommon.[35]

On the grammatical level, it looks as if the languages of the SBH Stock have been influenced by their northern neighbours of the West Papuan Phylum (WPP) and that this influence is strongest in the Inanwatan and Konda-Yahadian families.

The same picture is presented on the lexical level. Cognation percentages between the SBH Stock language and WPP languages are generally higher than those between the TNGP and the Greenberg's "Western Group", and are highest between the SBH Stock and the West Bird's Head (WBH) Family, raising from an average of nearly 7% between the SBH Family and the WBH Family to nearly 11% between Konda-Yahadian and the WBH Family. Brat, of the Central Bird's Head (CBH) Family, shares 7-9 cognates with its southern neighbours Puragi, Konda, and Yahadian. Thus, the highest average percentages are found between language groups which border on each other.

The chart opposite presents the average cognation percentages and their range of variation for the families of the SBH Stock and the BH Super Stock.

That borrowing could account for a considerable inflation of the cognation percentages is most clearly seen in the Inanwatan and Konda-Yahadian Families. They share with the languages of the WBH Family, quite a few cognates which because of their highly localized occurrence with the SBH Stock, probably have been borrowed from the WBH Family.

Chart: SBH Stock languages compared with languages of the BH Super-Stock (WBH = West Bird's Head, NBH = North Bird's Head, CBH = Central Bird's Head). Average cognation percentages and range of variation.

	SBH F.		Inanwatan F.		Konda-Yahadian F.		Total average SBH Stock
WBH F.	6.8	4-11	8.1	5-12	10.7	8-15	7.8%
NBH F.	4.6	3-6	5.5	5-6	4.2	4-5	4.7%
CBH F.	4.7	3-9	4.7	3-6	6.7	6-8	5%

The chart on the following page shows the numbers of cognates shared by four languages of the SBH Stock and the languages of the BH Super-Stock, broken down into three categories. Those of category A have etyma in established TNGP languages; those of category B have no such etyma, but etyma are found in most or all of the SBH Stock languages. Those of category C are found only in one language within the SBH Stock, or in two, or at most three, adjoining languages. It is this category, most strongly represented in the Inanwatan and Konda-Yahadian Families, which contains probable borrowings from the BH Super-Stock. Borrowing, but then in the reverse direction, can also be expected in categories A and B, but the situation here is much less clear and only in a few cases borrowing from the SBH Stock seems evident.[36]

In this connection it should be pointed out that the languages of the BH Super-Stock have average cognation percentages of up to 5% with some TNGP families, as was shown in the first chart in this section. The majority of the shared cognates belong to series also found in the SBH Stock, and may therefore reflect a borrowing rather than a genetic relationship. A few probable cognates however are not shared by SBH languages, for instance *fire* Madik but, Karon bot, Brat ta-fox, Ekagi bodia, Kati amot; *woman* Brat finya, Syagha (Awyu Family) finigi, Ok Family: wonoŋ, unaŋ, wanaŋ, waniŋ.

	Barau			Puragi			Inanwatan			Yahadian		
	A	B	C	A	B	C	A	B	C	A	B	C
WBH F.												
Kuwani	3	2	-	4	2	-	2	1	2	-	1	6
Tehit	2	4	-	3	3	-	2	2	2	1	1	6
Kalabra	5	2	-	5	3	-	4	2	3	3	2	8
Seget	2	2	-	2	1	-	2	-	4	2	-	7
Moi	3	1	-	3	2	-	2	1	5	3	1	4
Moraid	3	3	-	3	2	-	2	3	4	2	2	4
NBH F.												
Madik	3	-	-	3	-	-	3	-	2	2	-	2
Karon	3	1	-	4	1	-	3	-	2	3	1	-
CBH F.												
Dori	3	-	-	4	-	1	4	-	2	4	-	-
Brat	4	-	-	5	1	1	4	-	2	5	-	-

2.6.2.3.4.5. Conclusion

The languages of the South Bird's Head Stock have to be classified as members of the TNGP rather than as members of the West Papuan Phylum. Typologically as well as lexically they show considerable influence of the languages of the BH Super-Stock of the West Papuan Phylum; this influence is strongest in the Konda-Yahadian Family and diminishes towards the east. In the light of this, the SBH Stock has been assigned sub-phylic status within the TNGP. At the same time, the languages of the BH Super-Stock appear to contain a very small amount of vocabulary which ties in with the TNGP and which is difficult to explain by borrowing. Whether this is a sign of a very remote genetic relationship, or of an old TNGP substratum present in the BH Super-Stock, is at present impossible to say.

NOTES

1. These are composition (compounding), addition (affixation), repetition (reduplication and complete duplication) and modification. See E.M. Uhlenbeck: "Limitations of morphological processes, some preliminary remarks", *Lingua* 11, 1962, 426-32. Compounding as a process to form nouns, which is common to all the languages surveyed in this chapter, and of the type specifier-specified ("tree-trunk") will not be included here to avoid excessive repetitiveness.

2. That is, an adapted version of the Swadesh 100-item list. The need for adaptation of this list to New Guinean circumstances has been set out clearly by Bromley (1967). The problems connected with different practices in adaption have been ably discussed by McElhanon (1970, Chapter 2.). An evaluation of the wordlists used for survey purposes has been made by Laycock 1970. The list used by the present writer consists of the following items: *ashes, belly, big, bird, black, blood, bone, breast, burn, cloud, cold, come, die, dog, dry, ear, earth, eat, egg, eye, fire, fish, to fly, foot, fruit, give, green, grease, good, hair, hand, head, I, leaf, lie down, knee, long, louse, man, many, meat, moon, mountain, mouth, nail, name, nape, new, night, nose, one, path, navel, rain, red, root, sand, say, see, snake, sit, skin, small, smoke, stand, star, stone, sun, swim, tail, that, this, tongue, tooth, tree, two, walk, warm, water, we, what, white, who, woman, yellow, you* (sing.), *back of body, he, heavy, near, old (things), old (people), hole, to cry, rope, short, sky, housefly, spittle, three, wet, wind, wing, you* (plur.), *vein.*

3. Throughout this chapter short introductory paragraphs have been assigned the digit 0 as number of reference.

4. Formerly the Unevangelized Field Mission (U.F.M.).

5. Voorhoeve, C.L., 1970: "Some notes on the Suki-Gogodala subgroup of the Central and South New Guinea Phylum", *PL*, C.13:1247-70.

6. To avoid cumbersome repetition in the paragraphs on phonology in this chapter, the phonetic transcriptions of phonemic symbols has been omitted if it would not introduce any new symbols, i.e. to avoid phonetic transcriptions like p [p], m [m], etc.

7. To conform to the spelling in Neuendorf's grammar. Older publications use the symbol æ.

8. Drabbe (1955) mentions Upper Bian as the fifth dialect of Marind, but both their cognation percentage (67%) and the differences in grammatical structure are in favour of treating Bian as a separate language.

9. Lexicostatistically the group is a stock-level Family; structurally, however, it is an aberrant member of the TNGP, and therefore classified as a sub-phylum, (see 2.5.3.3.2. in this volume).

10. Nevermann, who visited the area in 1934, still gave 600 as the approximate total number of Yelmek and Maklew people (Nevermann 1952).

11. For the rules governing the rich allophonic variation of Tamagário phonemes, see the notes mentioned above.

12. Different forms in different lists; the information does not look reliable, since all the other languages in the family do not distinguish between singular and plural in the 3rd person. The lists give the following forms: ari'a, eria, eda, arofa.

13. An early English abstract of Drabbe's field notes, now superseded by Drabbe's subsequent work, can be found in Boelaars 1950.

14. The singular-dual-plural distinction which is defective in the personal pronouns is complete in the verbal system of Kamoro.

15. The tilde symbolizes the compensatory nazalisation of the last vowel in a word when a word-final n is dropped.

16. The allophonic variations were noted in a Pisa wordlist collected by the present writer. The informant came from Keru village on the Kampong River.

17. Healey (1970) places Kotogüt in the Awyu sub-family giving Drabbe as his source. But Drabbe does not give any indication of the sub-family affiliation of the language.

18. Schoorl, J.W. 1957: "Kultuur en Kultuurveranderingen in het Moejoe gebied". Den Haag. J.N. Voorhoeve.

19. Brongersma, L.D. and G.F. Venema, 1962: *To the Mountains of the Stars*. Hodder and Stoughton, London.

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22. Source references omitted by the present writer.

23. Horne, F. Charles, 1959: An Outline of Grammar, Bokondini Dialect of the Dani Language. Mimeographed.

24. The description closely follows Bromley 1970, see footnote 21.

25. Bromley's Ph.D. thesis was not yet available to the writer at the time of his writing the present chapter.

26. The description closely follows Bromley 1970, see note 21.

27. See note 21.

28. The Christian and Missionary Alliance.

29. The verb forms given do not form a paradigm but come from different wordlists representing separate points in the Mairasi/Semimi language area. The forms with -ano/kano are imperatives.

30. fonera, funurure are given in one list, vata and vanera in another. Vata is a demonstrative pronoun *that (one)*.

31. Mantion and Manikion are now classified as two dialects of the same language, but here we will follow Greenberg in keeping them apart.

32. The basic TNGP pattern of personal pronouns is: Sing.1. na, 2.ka, 3.ya; plur.1. ni, 2.ki; see 2.3.3.2. in this volume.

33. The only probable cognates shared exclusively with non-TNGP languages in the Bird's Head are *grease* (with Karon Dori, Brat), *moon* (with Meax, Mantion, Hattam) and *two* (with Amberbaken).

34. J. Coenen reports that the sea-faring tribes of the Iha Papuans went on expeditions as far as the Kei and Tanimbar Islands to get slaves. Contact with the western coast of the Bird's Head therefore lay well within their capacity.

Their expeditions into the East Indonesian Archipelago must have carried the Iha Papuans much further than the Kei and Tanimbar Islands. Lexical data which only just have come to hand point unequivocally to a close connection between the Papuan languages of Timor, Alor, and Pantar, and the languages of the West Bomberai Stock (see 2.10.1.1.1.5.2. in this volume).

35. It is one of the aberrant features of the languages of the Marind Stock (see 2.6.2.2.2.).

36. Thus, in the case of *louse* (in all the SBH languages and in Kuwani, Tehit, and Kalabra), *fruit* (SBH and Inanwatan Families, further in Seget, Moraid, and Madik), *near* (Puragi, K. Baru, Inanwatan F. Konda-Yahadian F., but also Sempan and Kamoro of the TNGP languages, and further in Kalabra, Moraid, and Moi), and *egg* (all languages of the SBH Stock, as well as Asmat and Kamoro versus Kalabra and Moraid).

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2.7. EASTERN CENTRAL TRANS-NEW GUINEA PHYLUM LANGUAGES

S.A. Wurm

2.7.1. INTRODUCTORY REMARKS

The languages dealt with in this chapter are members of the East New Guinea Highlands, Kutubuan and Angan Stocks of the Trans-New Guinea Phylum, as well as of the Teberan, Pawaian, Turama-Kikorian, Inland Gulf, Eleman and Oksapmin Sub-Phyla of that phylum (see 2.5.3.3.2.).

Of these stocks, the Kutubuan Stock has been classified as forming a super-stock with the Central and South New Guinea Stock which has been discussed in 2.6.2.2.6. At the same time, the classificatory situation of the East New Guinea Highlands, Kutubuan and Central and South New Guinea Stocks is hard to delineate precisely, and the three stocks are linked with each other through areas of transition (see below 2.7.2.1.). As a new development, Franklin (see 2.14.2. in this volume) has recently suggested new classificatory affiliations of the languages of the Kutubuan Stock which in the present classification (see below 2.7.3.) is believed to consist of two families, the East Kutubu and the West Kutubu Family. He suggests that the two families be assigned membership to two different stocks in spite of their obvious, though by no means close, relationship to each other, i.e. the West Kutubu Family to the Central and South New Guinea Stock, and the East Kutubu Family to a newly created Trans-Murray Stock which also includes the Teberan and Pawaian (now sub-phylum-level) Families. In 2.14.2. he gives a number of reasons for this new classification which illustrates the vexed nature of linguistic interrelationships in this particular area of the New Guinea mainland which has already been indicated in 1.4. in this volume, and demonstrates the presence of several interacting and co-existing, often contradictory, layers of relationship involving languages in it - a phenomenon which is not uncommon in the New Guinea area.

Wurm, S.A. "Eastern Central Trans-New Guinea Phylum Languages". In Wurm, S.A. editor, *New Guinea area languages and language study, Vol. 1, Papuan languages and the New Guinea linguistic scene.* **C-38:461-526**. Pacific Linguistics, The Australian National University, 1975. DOI:*10.15144/PL-C38.461*

For the purpose of this chapter, the classification valid to date and allowing for the presence of a Kutubuan Stock, with the Teberan and Pawaian Families constituting stock-level members of a sub-phylum-level super-stock in the Trans-New Guinea Phylum, will be adhered to (see 2.5.3.3.2.).

LEGEND TO MAP OF EASTERN CENTRAL TRANS-NEW GUINEA PHYLUM AREA

Note: To facilitate reference to the General Map of Papuan Language Stocks in Papua New Guinea as given in 1.3.4., the stock numbers appearing on that map have been given below in parentheses after the names of the stocks listed.

(F = Family, f-l I = family-level Isolate)

THE EAST NEW GUINEA HIGHLANDS STOCK (3)
- a Eastern F
- b East-Central F
- c Central F
- d West-Central F
- e Kalam F
- f Wiru f-l I
- g Kenati f-l I

THE KUTUBUAN STOCK (4)
- h West Kutubu F
- i East Kutubu F

THE ANGAN STOCK-LEVEL FAMILY (6)
- j Angan F

THE TEBERAN-PAWAIAN SUB-PHYLUM-LEVEL SUPER-STOCK

THE TEBERAN FAMILY (33)
- k Teberan F

THE PAWAIAN FAMILY (34)
- l Pawaian f-l I

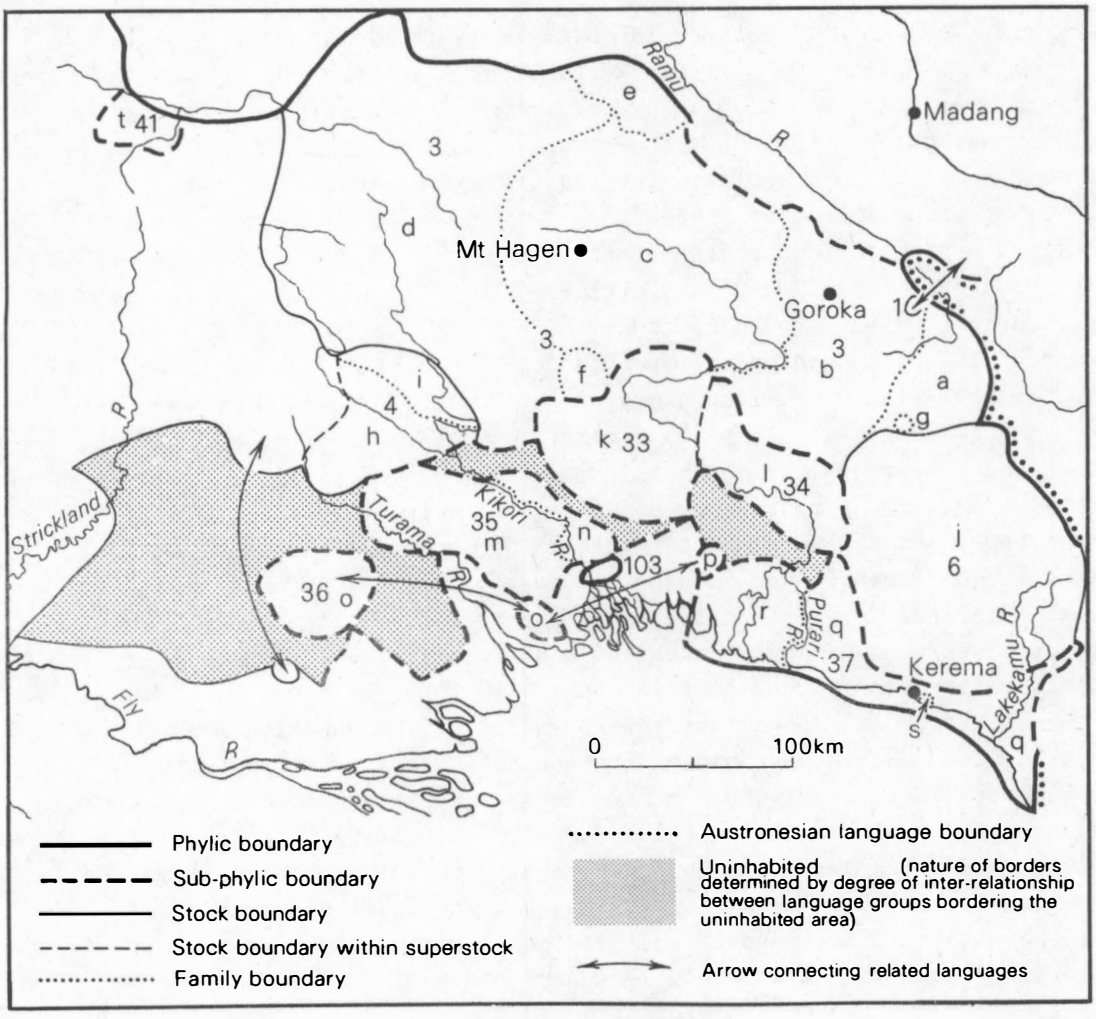
THE TURAMA-KIKORIAN SUB-PHYLUM-LEVEL STOCK (35)
- m Mena F
- n Kairi (or Dumu) f-l I

THE INLAND GULF SUB-PHYLUM-LEVEL STOCK (36)
- o Minanibai F
- p Ipiko f-l I

THE ELEMAN SUB-PHYLUM-LEVEL STOCK (37)
- q Eleman F
- r Purari (Koriki, Namau) f-l I
- s Tate f-l I

THE OKSAPMIN SUB-PHYLUM-LEVEL ISOLATE (41)
- t Oksapmin sub-phylum-l I

FAMILY MAP OF EASTERN CENTRAL TRANS-NEW GUINEA PHYLUM AREA



2.7.2. THE EAST NEW GUINEA HIGHLANDS STOCK IN GENERAL

2.7.2.1. *THE RELATION OF THE EAST NEW GUINEA HIGHLANDS STOCK TO THE KUTUBUAN AND CENTRAL AND SOUTH NEW GUINEA STOCKS*

In 1.4., the special role of the Duna language and of the languages now constituting the Kutubuan Stock was discussed, with the implications of their role upon the question of the extent of relationship between the East New Guinea Highlands, the Kutubuan, and the Central and South New Guinea Stocks, and the relative classificatory status of these three stocks, emerging from that discussion. The question arises whether in the light of the obvious chain relationships between these three stocks, they should not be included into a single, very large super-stock. It may be suggested that in addition to this chain-relationship, the reconstructability of common proto-forms for the bound verbal subject and object markers in several languages of the East New Guinea Highlands Stock and of languages of the Ok Family of the Central and South New Guinea Stock (Pawley 1966, Wurm 1977, see also 2.4.1.3. in this volume) constitutes a strong reason for combining these two very large stocks into a super-stock. However, some rather pronounced typological and structural differences between the majority of the languages of the two stocks which are largely attributable to substratum influence in Central and South New Guinea Stock languages, seem to militate against such a classification, and it has therefore not been proposed here.

The situation is somewhat different regarding the relationship between the Central and South New Guinea, and the Kutubuan Stocks. Originally, a clear stock border between the East New Guinea Highlands Stock and the languages now included in the Kutubuan Stock was set up, but Franklin's results concerning the quite numerous regular sound correspondences between Fasu and Kewa, as mentioned in 1.4., and later developments, have shown this to be unjustified. At the same time, the earlier classifications suggested that these languages had a closer affinity to the Central and South New Guinea Stock than to the East New Guinea Highlands Stock (see 1.4.). This was later re-affirmed in McElhanon and Voorhoeve 1970 concerning Fasu. Franklin's and Voorhoeve's (1973) results which clearly demonstrated the presence of the chain-relationship mentioned above, led to difficulties in connection with the classificatory status of the group constituted by the two family members of the problematic Kutubuan Stock. The two families appear to be equally closely related, on the lexical level, to languages of the West-Central Family of the East New Guinea Highlands Stock (at least to the Kewa dialects) and to some families of the Central and South New Guinea Stock, and to constitute a definite link between these two large stocks. However, in view

of the inadvisability, for structural and typological reasons (see above), of joining the latter two stocks into a super-stock, the preferable classificatory position of the Kutubuan Stock may rest on structural and typological criteria and on the apparent degree of relationship which it shows with these other two stocks as a whole. These criteria seem to support a closer link for it with the Central and South New Guinea Stock rather than with the East New Guinea Highlands Stock, and it has therefore been decided to include it into a super-stock with the latter. In fact, it might have well been possible to classify its constituent families simply as members of the Central and South New Guinea Stock as has now been suggested for Fasu by Franklin in his latest approach (see above 2.7.1.). However this approach would not indicate the relatively close connection between these two families in contrast to their relationship to the other families of the Central and South New Guinea Stock, and would also tend to over-emphasise their differences from the East New Guinea Highlands Stock, especially its West-Central Family. The apparent inconsistency in the treatment of the Kutubuan Stock families, and of Duna (see 1.4.) which has now been included into the Central and South New Guinea Stock, seems justified when considering the fact that the lexical relationship between Duna and languages of the West-Central Family of the East New Guinea Highlands Stock appears to be of a lower order than that observable between the West-Central Family and the Kutubuan Stock languages, though it seems to have been obscured by heavy borrowing by Duna from Huli of this West-Central Family. At the same time, Duna differs structurally and typologically more from the East New Guinea Highlands Stock languages than does Foe (Kutubu) of the Kutubuan Stock (Wurm 1964), and is much more similar to some languages of the Central and South New Guinea Stock.

2.7.2.2. *THE EAST NEW GUINEA HIGHLANDS STOCK IN DETAIL*

2.7.2.2.1. Establishment of the Stock and General Remarks

The East New Guinea Highlands Stock belongs to the most important Papuan language stocks: it is one of those which have been most thoroughly studied, and it has great numerical importance: its speakers comprise approximately one-third of all speakers of Papuan languages (see 1.3.1.). At the same time, the average number of speakers of the languages included in it is about 25,300 - nearly seven times greater than the average for the Papuan languages as a whole which is only over 3,700 speakers per language.

The stock was set up by the present writer (Wurm 1960, 1961a, 1961b, 1961c, 1962, 1964, 1965, 1971) on the basis of earlier pioneering work

by Capell (1948-49). It was originally believed to be composed of four families and one family-level isolate, Duna (see 1.4.), but modifications arising out of work by Biggs (1963), Pawley (1966), Franklin (1968 and personal communication), the present writer and several members of the New Guinea Branch of the Summer Institute of Linguistics resulted first in the inclusion of another family, the Kalam Family, into it, though its relationship to the stock, believed to be more distant, had been recognised by the present writer from the beginning. Later, Duna was excluded from it (see 1.4.) and included into the Central and South New Guinea Stock as a member of a newly established family in it, and Wiru (Kerr 1967), formerly classified as a sub-family within the West-Central Family, was given the status of a family-level isolate in the stock. Also, Kenati (Ganati, Aziana) and Owena (Waisara) which had until recently been thought to possibly constitute two unrelated phylum-level isolates (Wurm 1971), could, in the light of preliminary work by Lloyd (1973), be included into the East New Guinea Highlands Stock, Kenati as a family-level isolate in it (or perhaps as a sub-family-level isolate of the East-Central Family) and Owena as a member of the Eastern Family. In its present version, the East New Guinea Highlands Stock contains therefore five families and two family-level isolates. The relationship of the stock itself to other stocks, and in consequence, its membership to the Trans-New Guinea Phylum, was established by the present writer (see 1.4.).

Studies of individual languages and language groups of the East New Guinea Highlands Stock are very numerous. The great majority of these have been authored by members of the Summer Institute of Linguistics, mainly of its New Guinea Branch, the Australian National University, and missionaries of various Missions, mostly the Lutheran, Catholic and Baptist, active in the area. Only a few publications were produced by authors working outside these organisations (e.g. Biggs 1963, Haiman 1972, Pawley 1966).

Reference to studies produced by the first two categories of authors has been made in (III) 7.9.2. and (III) 7.9.1. (One particularly important collection of contributions by members of the Summer Institute of Linguistics to the study of languages of the Eastern Family is McKaughan, ed. 1973.) A few studies authored by the third category are for instance Aufenanger 1952, 1953, Bergmann 1953 and n.d., Strauss n.d., Luzbetak 1954, McVinney and Luzbetak 1954, Nilles 1969, Blowers, R. and B. 1970, Blowers B. 1970, Draper 1953, 1954 and n.d., Rule W. 1954, Hintze 1963, Finney, Rothenbush and Hintze 1964, Budke 1964, Renck 1975, 1976, etc.

A large number of unpublished manuscripts containing studies in East New Guinea Highlands Stock languages is in the hands of the New Guinea Branch of the Summer Institute of Linguistics, and of various missions,

especially the Lutheran, Catholic, Baptist and Asia Pacific Christian (formerly Unevangelised Field) Missions.

2.7.2.2.2. Member Families of the East New Guinea Highlands Stock and their Geographical Location

The five families and the two family-level isolates mentioned above in 2.7.2.2.1. are the Eastern, East-Central, Central, West-Central and Kalam Families, as well as the Wiru and the Kenati family-level Isolates. They occupy the Eastern, Chimbu, Western, Enga, and Southern Highlands Districts, with some overlap into the neighbouring Districts, especially along the northern and to a very small extent along the eastern borders. The Gende Sub-Family of the East-Central Family is completely, and the Kalam Family to a great extent, within the Madang District. Enga of the West-Central Family overlaps to the north into the East Sepik District to quite some extent, and the Lemben Sub-Family (if it is real, see below 2.7.2.2.3.) of the West-Central Family is entirely inside of it on the Karawari River.

The geographical position of the first four families is indicated by their names: the Eastern Family is situated in the north-eastern corner section of the Eastern Highlands District, overlapping into the Morobe District in the east; the East-Central Family takes in most of the remainder of the Eastern Highlands District (except for the south-eastern corner and some minor southern areas) and overlaps to the north into the Madang District; the Central Family occupies the Chimbu District (except for some of its southern parts), most of the Western Highlands District and overlaps northward into the Madang District; and the West-Central Family occupies the Enga District, overlaps northward into the Madang and East Sepik Districts and takes in the greater part of the Southern Highlands District. The Kalam Family borders on the Central Family in the north-west and takes in the Western Highlands District and Madang District border area, with its greater part situated in the latter. The Wiru family-level Isolate is situated in the northern section of the eastern part of the Southern Highlands District, and the Kenati family-level Isolate is located downstream from Wonenara on the Aziana River in the south-eastern corner area of the Eastern Highlands District.

2.7.2.2.3. Composition of the East New Guinea Highlands Stock

The composition of the East New Guinea Highlands Stock (929,200[1]) is as follows:

1) Eastern Family 41,100
   1a) Gadsup-Auyana-Awa Sub-Family[2] 31,000
      Gadsup dialects 22,000
       Gadsup 9,000
       Oyana 950
       Agarabi 12,000
      Auyana dialects 7,500
       Auyana 3,800
       Kosena 2,700
       Usarufa 1,000
      Awa dialects 1,500
   1b) Tairora Sub-Family 9,700
      Tairora dialects 8,500
      Binumarien[3] 190
      Waffa 1,000
   1c) Owena sub-family-level Isolate 350

2) East-Central Family 185,000
   2a) Gende (Bundi) sub-family-level Isolate 9,000
   2b) Siane Sub-Family 18,000
      Siane 16,000
      Yabiyufa 2,000
   2c) Gahuku Sub-Family 38,000
      Gahuku-Asaro dialects 23,000
       Gahuku 9,000
       Asaro 14,000
      Benabena 15,000
   2d) Kamano Sub-Family 84,000
      Kamano dialects[4] 84,000
       Kamano 47,000
       Kanite 3,400
       Keiagana 8,000
       Yate 4,600
       Yagaria 21,000
   2e) Fore Sub-Family 36,000
      Fore 18,000
      Gimi[5] 18,000

3) Central Family 328,500
   3a) Chimbu Sub-Family 156,000
      Chimbu dialects 131,000
       Chimbu proper (Kuman) 66,000

Nagane[6]	1,000			
Dom	9,300			
Golin (Marigl)	26,700			
Salt-Yui	6,000			
Sinasina	19,000			
Nondiri	2,700			
Chuave		21,000		
Nomane		4,000		
3b) Wahgi Sub-Family			54,300	
Wahgi		45,000		
Nii		9,300		
3c) Jimi Sub-Family			13,000	
Narak dialects[7]		5,000		
Narak	3,000			
Gandja (Monggum)	2,000			
Maring		8,000		
3d) Hagen Sub-Family			105,000	
Hagen dialects		101,000		
Medlpa	69,000			
Gawigl (Kaugel)	35,000			
Aua	450			
4) West-Central Family				339,400
4a) Enga Sub-Family			172,900	
Kyaka		14,000		
Enga dialects[8]		149,382		
Layapo	25,023			
Kopona	6,766			
Sau[9]	15,228			
Kaina	10,959			
Mai	38,508			
Malamuni	3,600			
Tayato	13,507			
Yandapo	10,804			
Kandepe	24,987			
Katinja		900		
Nete[10]		200+		
Lembena (Bisorio, Iniai)[11]		600		
Ipili		7,764		
4b) Huli sub-family-level Isolate			65,000	

4c)	Angal (Mendi)-Kewa Sub-Family		101,500	
	Angal (Mendi) dialects	55,000		
	Angal Heneng	25,000		
	Angal	10,000		
	Southern Angal Heneng	20,000		
	Kewa dialects	44,000		
	West Dialect	20,000		
	East Dialect	20,000		
	South Dialect (Pole)	4,000		
	Sau (Samberigi)	2,500		
5)	Kalam Family		18,600	
	Kalam	13,000		Wiyaw and Aramo may link with the Kalam Family, see note at end of 2.15.1.
	Kobon	3,500		
	Gants (Gaj)	1,900		
6)	Wiru family-level Isolate[12]		16,000	
7)	Kenati (Ganati, Aziana) family-level Isolate[13]		550	

2.7.2.2.4. Interrelationships within the East New Guinea Highlands Stock

The degrees of the interrelationship between languages of the East New Guinea Highlands Stock are, in general, quite close, both within the individual families and across family-boundaries, and are apparent both on the lexical and the structural levels. Results arrived at by lexico-statistical techniques are closely similar to those based on structural and typological comparisons.

The questions of the extent of the interrelationship of the East New Guinea Highlands Stock communalects, as dialects or separate languages, have been vexing problems since the first definite establishment of the stock by the present writer (Wurm 1960). At that time, figures of 78%-81% sharing of basic vocabulary cognates between communalects which constituted a modification of Swadesh's (1955) postulate of 81%, were adopted as diagnostic for the distinction between languages and dialects, and a number of separate languages established in the light of this. However, as a result of the generally close relationship of languages within the East New Guinea Highlands Stock Families, many cognation percentage figures lay between 65% and 80%, and it was observed soon afterwards that established languages with above 70% or more shared basic vocabulary cognates showed a quite marked extent of mutual intelligibility. The problem was discussed by the present writer and Laycock (Wurm and Laycock

1962), and considering the high level of mutual intelligibility observable between communalects showing well below 78% shared cognates, the presence of mutual intelligibility chains (or neighbour intelligibility) and the appearance of multiple cognates shared by two languages for the same concepts, they challenged the justification of adopting a 78%-81% cognation as the border-line between language and dialect in the Papuan linguistic field in the absence of comparative studies undertaken in some detail, and proposed that it be lowered considerably. A suggested re-classification of the communalects of the East New Guinea Highlands Stock based on such lowered percentage figures made possible the combination of thirty communalects which had been assigned separate language status into only eleven distinct languages, though some of the decisions determining their separation were arbitrary and perhaps subject to doubt.

However, the original classification by the present writer was widely adopted in literature and in practical approaches relating to languages of the East New Guinea Highlands Stock, to some extent for sociolinguistic and socio-political reasons. One notable exception was McKaughan's (1964) view who classified a number of the languages originally established by the present writer within the Eastern Family, as only dialects.

The present writer continued to employ his old classification with some reservations (Wurm 1971) until comparative studies involving Papuan languages on a large scale (McElhanon and Voorhoeve 1970) and East New Guinea Highlands Stock languages in general (Wurm 1977) began to show that generally, percentages of basic vocabulary cognates established by the inspection method were usually far too low (see 2.2.3. and 2.2.5. in this volume). The result of this was that many of the relatively high cognation percentages previously established within the East New Guinea Highlands Stock shifted into a range lying above the language-dialect diagnostic border which changed the status of the languages involved to that of dialects. The classification given above in 2.7.2.2.3. constitutes the result of this re-assessment.

A few difficulties remain:

Wiru was originally classified tentatively as a sub-family-level isolate in the West-Central Family, but to some extent, there have always been problems in attempts at classifying it. Its lexical relationship to other East New Guinea Highlands Stock languages is comparatively low and rather diffuse: the percentages of cognates which it shares with members of the West-Central Family are in the mid-to-high thirties, while they are in the mid-to-high twenties with those of the Central Family, and, at the same time, around 15% and more with languages of the Teberan sub-phylum-level Family (see 2.7.5.2.). However, much of its lexical resemblance with at least the languages of the West-Central Family may be

due to borrowing, and according to K. Franklin (personal communication), regular sound correspondences are not greatly in evidence. (But see 2.4.3. in this volume.) At the same time, Wiru is typologically and structurally not greatly aberrant when compared with other languages of the East New Guinea Highlands Stock. However, while the languages with which it shows greatest structural resemblance are those of the West-Central Family, it shares some structural features, especially on the pronominal level, with languages outside the stock such as those of the Teberan sub-phylum-level Family. In the light of all this, the reclassification of Wiru as a family-level isolate within the East New Guinea Highlands Stock may perhaps be justified, though the problem cannot as yet be regarded as fully settled.

Kenati had formerly been regarded as an unrelated phylum-level isolate in the absence of reliable information on it, but was recently found by Lloyd (1973) to display the following percentages of shared cognates (on the basis of 170 words): with Gimi 19%, Fore 17%, Owena 19%, Awa 12%, Tairora 14%, Waffa 12%, and with Angan Family languages (2.7.4. below) on average 5%. The weighting of these figures (according to Thomas and Healey 1962) making them comparable to percentages based on longer lists, requires them to be lowered by 1% each, except for the 5% with Angan Stock languages which remain unchanged.

When considering these figures, it appears that Kenati can tentatively be included into the East New Guinea Highlands Stock as a family-level isolate, though in the absence of structural information on Kenati, this has to remain preliminary. However, a corroboration of its membership to the stock is provided by the fact that the Kenati belong culturally to the East New Guinea Highlands people. Stories of the Kenati and the Baruya (Angan stock-level Family, see 2.7.4. below) state that the Kenati are descendants of Baruya and Fore (or Gimi) people (Lloyd 1973): this may suggest that Kenati may perhaps have originally been an Angan language - but this question can only be solved in the light of additional information. The situation may perhaps be comparable to that of the Abaga language of the Finisterre Stock (see 2.8.1.3.10. in this volume) whose few speakers live nowadays largely in the area occupied by speakers of Kamano of the East-Central Family of the East New Guinea Highlands Stock. It shares 25%-30% basic vocabulary cognates with Kamano, and is structurally quite similar to it, except for some features of its verb structure. At the same time, only about 15% of its basic vocabulary show clear connections with lexical items of Finisterre Stock languages.

In any case, it seems very likely, on the basis of experience with Papuan languages in general (see above and 2.2.3. and 2.2.5.) that the cognation figures listed above for Kenati are much too low, and that the

real percentages of the basic vocabulary items which it shares with Gimi, Owena and perhaps also with Fore are high enough to permit its inclusion into one of the East New Guinea Highlands Stock families, probably the East-Central Family. The intermediate position of Kenati between the East-Central and Eastern Families is immediately obvious in this connection. However, the same remark also applies to Gimi which shares 32%-35% basic vocabulary cognates with the non-adjacent Auyana dialects of the Eastern Family, 35% with the adjacent Keiagana of the East-Central Family, and 46% with Fore, while it is at the same time structurally closer to Keiagana than to Fore, and also shares more structural features with languages of the Eastern Family than any other East-Central Family language. In the light of further study, it may perhaps prove possible to combine Gimi and Kenati into a separate sub-family within the East-Central Family, with this family having the status of a link between the East-Central and the Eastern Families which would allow the combination of these two families into a super-family.

It may be mentioned that some languages, of several sub-families, show higher percentages of shared basic vocabulary cognates across sub-family boundaries than with members of their own sub-families, whereas the extent of agreement which they display with members of their own sub-families in the phonological shapes of bound morphemes, and in their structures in general, demonstrate their closer general relationship to languages of their own sub-family. Benabena and Yabiyufa are good examples for this: Benabena shares over 60% basic vocabulary cognates with Keiagana and even more with Kamano, but only 57% with Gahuku of its own sub-family. Similarly, Yabiyufa shares almost 60% with Gahuku, but only 52% with Siane of its own sub-family.

2.7.2.2.5. Typological and Structural Features of the East New Guinea Highlands Stock Languages

2.7.2.2.5.1. *General Remarks*

The typological and structural features of the East New Guinea Highlands Stock languages are, in general, those listed in 2.3.2.5. and 2.5.2. in this volume as characteristic of Trans-New Guinea Phylum languages, though aberrant features, probably due to substratum influence, are quite markedly in evidence in some areas. A study of the distribution of typological features of the languages of the stock was carried out by the present writer (Wurm 1964). The main results of this study are as follows:

Regional typological features are found within the stock, and major boundaries of the distribution of such features coincide with, or are

located near, the border between the East-Central and the Central Families. A similar but much less pronounced boundary is met with at, or near, the border between the West-Central and Central Families.

There is close typological similarity between the Eastern and East-Central Families, a fair measure of it is observable between these two families and the Kalam Family (Pawley 1966), and some regional typological agreement is present between the East-Central and West-Central Families. The Central Family does not show specific regional typological affinity with any other particular family in the stock. This last fact is also borne out by the somewhat aberrant nature of the Central Family languages with regard to the general Trans-New Guinea Phylum feature of noun classification through existential verbs (see 2.5.2.3.1. in this volume). The strong presence of set III pronoun forms in languages of the Central Family may also be mentioned in this connection (see 2.3.3.4.).

Some notes may be added on characteristics of individual families within the East New Guinea Highlands Stock:

2.7.2.2.5.2. *The Eastern Family*

Phonologically, the Eastern Family languages are characterised by a strong development of tonal systems, and the relatively high statistical frequency of the appearance of the glottal stop phoneme.

Their pronoun systems show a great prevalence of set II and set III forms (see 2.3.3.3. and 2.3.3.4.) over the set I (see 2.3.3.2.) forms largely typical of Trans-New Guinea Phylum languages in general (see 2.5.2.2.).

Morphologically, there is a lower incidence in the use of possessive affixes with nouns than in languages of the East-Central Family of the stock, but the verbs show a very great elaboration of aspectual and modal affixes, and of sentence-medial verb forms (see 2.5.2.3.2.). In the latter forms, anticipatory indication of the subject of the following clause takes place. In some languages of the Eastern Family, morphologically signalled number forms of the nouns occur - a feature very rare in Trans-New Guinea Phylum languages in general (see 2.3.2.5.).

A few notes on **Awa** will be given here for illustration. (R. Loving 1973a, 1973b, R. and A. Loving 1973, McKaughan and A. Loving 1973, R. Loving and McKaughan 1973, A. Loving and McKaughan 1973.)

Phonology

Consonants:	p	t	k	ʔ
	b	d	g	
		s		
	m	n		
	w	y		

Vowels:

i	u
e	o
æ	ɒ
a	

Tones: four tonemes: high, falling, rising, low. Morphophonemic changes are very complex.

Remarks on Morphology

Nouns: dual, trial, and plural suffixes occur, e.g. iya-tade = *two dogs*, iya-madi = *many dogs*.

A number of suffixal relation markers are present and denote subject, instrument, a number of different locational relations, causation, purpose, possession between nouns, etc., e.g. poedɒ-ka næde = (*pig*-subject) *is eating*; sogi-taten amuduwededе = *(knife-with) he cut*; mɒdi-taʔ mado = *(bed-on) set (it)*; wani-taha pokide = *(water-across) he went*; iya-ne nɒ = *the dog's house*, etc.

Nouns denoting inalienable entities (mostly body parts and kinship categories) have obligatory possessive prefixes - with other nouns, possession is indicated by the preposed personal pronouns with the possessive suffix -ne added to the latter. The following prefixes exist:

1sg	ne-	with allomorphs
2sg	te-	
3sg	we-	
non-specified third sg	a-	
non-third pl	ite-	
third pl	se-	

Example: -nuo = *neck*, wena-nua = *his neck*, a-bowa = *someone's father*.

Pronouns: As with the possessive prefixes, the person and number distinctions in the personal pronouns are restricted and somewhat rudimentary when compared with the indication of these categories with subject suffixes to verbs. The personal pronouns are:

1sg	ne
2sg	ade
3sg	we
non-third pl	ite
third pl	se

Emphatic forms occur.

Verbs: Verbs are independent or dependent. The subject and the object (direct and indirect, with various restrictions) are marked with verbs, the latter through prefixes or suffixes, e.g. nu-b-iʔ = *me-hit-he*, te-aw-iʔ = *tell-him-he*. Benefactive forms occur, e.g. keki-nin-t-æʔ = *burn-me*-benefactive-*he* = *he burned it for me*.

The independent verbs have two conjugational classes which are characterised by different stem vowels. Complex morphophonemic rules apply.

The subject of verbs is denoted by suffixes in the first, second and third person in singular, dual and plural. The markers of 2nd and 3rd dl and pl are formally identical - a typical Trans-New Guinea Phylum characteristic (see 2.5.2.3. in this volume). The subject markers are fused into portmanteau suffixes with the tense markers. Tenses distinguished are: near past (including action still in progress), far past, and future.

Principal alternants of the subject elements are:

	1st	2nd	3rd
sg	-ga ∿ -ʔ	-ŋa ∿ -naʔ	-de ∿ -ʔ
dl	-ya ∿ -yaʔ	-ya ∿ -yaʔ	
pl	-na ∿ -naʔ	-wa ∿ -ʔ	

Examples of tense-subject portmanteau suffixes: taga- = *see*: near past

	1st	2nd	3rd
sg	tag-oʔ	tag-ɒnaʔ	tag-æʔ
dl	tag-oyaʔ	tag-æyaʔ	
pl	tag-onaʔ	tag-ɒʔ	

A large number of aspectual and modal markers occur with verbs, denoting punctiliar, completive, benefactive, continuative, habitual, repetitive, inceptive, imperative, avolitional, certituative, dubitative, interrogative, and augmentative.

Dependent verbs are sentence medial verbs (see 2.5.2.3.2. in this volume), but there are also dependent final verbs in Awa. The latter occur in dependent clauses which are preceded by one or more clauses.

The dependent medial verb forms constitute the bulk of the dependent verb forms - the dependent final ones which are characterised by the appearance of special morphemes occur only in contrary-to-fact clauses and in clauses containing an indication of an obligation which are preceded by dependent medial conditional clauses.

Dependent medial verbs characteristically contain markers anticipating the subject of the following clause, or anticipating a second clause, while at the same time the subject of the medial clause in which they occur is also indicated with them.

The anticipatory subject markers are:

-na ∿ -ena *I, he*
-ɒ ∿ Ø ∿ e *you* (sg)
-ta ∿ -eta *we two, you two*
-ʔ ∿ -eʔ *we, you* (pl)
-da ∿ -eda *they two, they*

Example: tag-oga-da bok-oya? = *when I looked, you two went* = ([*look*]-[first person singular subject marker in near past tense form and in a form preceding anticipatory subject markers in medial verbs]-[anticipatory second person dual subject marker on medial verbs]) ([*go*])-[second person dual subject marker on final verbs in near past tense form]). For other examples see 2.5.2.3.2. in this volume.

Anticipatory subject markers which follow subject-tense portmanteau suffixes always signal a subject in the following clause which is different from the subject in the dependent medial clause. These subject-tense portmanteau suffixes differ in varying degrees from their equivalents occurring with independent verbs.

When the anticipatory subject markers refer to the same subject in the following clause, they are preceded by portmanteau suffixes denoting number, i.e.

sg -ani
dl -ayæ
pl -anæ

Examples: tag-ani-ena = *I will see it, I...*, tag-ayæ-eta = *we two will see it, we two...*

Anticipatory clause markers are mutually exclusive with the anticipatory subject markers. They a) indicate simply the fact that the action referred to by the verb in the dependent clause is in some way dependent on that expressed in a related independent clause, b) they mark a specific time when the dependent action occurred, c) they denote the fact that the action referred to in the dependent clause is the cause or reason for the action mentioned in the related independent clause.

2.7.2.2.5.3. *The East-Central Family*

In their phonologies, the East-Central Family languages show a strong development of supra-segmental features manifesting themselves in tonal systems and combined tone-stress systems. The glottal stop phoneme appears with extremely high statistical frequency in the languages of the Gahuku and the Kamano Sub-Families, and in Gimi.

Their pronoun systems show a great prevalence of set I forms (see 2.3.3.2.). They are mostly very similar in their basic structural characteristics, and amongst their features are high occurrence of possessive affixes and the presence of several declensional classes with nouns, the occurrence of a back-vowel-front-vowel ablaut in verb forms, and great elaboration of sentence-medial verb forms. In the latter, anticipatory marking of the subject of the following clause is frequent.

Some notes on **Yagaria**, a member of the Kamano Sub-Family, are given in (III) 7.5.3. and notes on sentence-medial verb-forms in Kamano are

included in 2.5.2.3.2. in this volume. Some more remarks on Yagaria (Renck 1975) will be given below for illustration:

Nouns: In (III) 7.5.3., the presence of two declension classes is mentioned, and the existence of agentive and other case suffixes indicated. The latter denote possession between nouns, benefactive, a number of local relations such as adessive, inessive, ablative, elative, also instrumental, comitative etc., e.g. a-ba? hudie = *woman*-agentive *said*.

The obligatory possessive prefixes appearing with nouns denoting inalienably possessed objects are as follows:

	1st	2nd	3rd
sg	da-	ga-	ø
dl	la?a-	lata-	ta-
pl	la-	lapa-	pa-

Example: da-kameva = *my spine*.

With alienably possessed nouns, possession is indicated by suffixes with the possessive form of the personal pronouns optionally preceding the noun:

	1st	2nd	3rd
sg	-di	-ka	-?a
dl	-ti?a	-titi?a	-ti?a
pl	-ti	-tipi	-pi

Example: (dagae?) hoya-di = *my garden*.

Inalienably possessed nouns with possessive prefixes can optionally take the possessive suffixes in addition, e.g. d-oulega-di = *my eye*.

Pronouns: The personal pronouns are:

	1st	2nd	3rd
sg	dagaea	gagaea	agaea
dl	la?agaea	latagaea	tagaea
pl	lagaea	lapagaea	pagaea

The same relational suffixes as appearing with nouns are added to pronouns, except for the agentive. The suffixes are added to allomorphic forms with the final -a replaced by ?, e.g. dagae-togati? = *from me* (<*dagae?-logati?). The forms with the final -a replaced by -? function as possessive pronouns, e.g. dagae? = *my*.

Verbs: In (III) 7.5.3., the presence of four conjugational classes (as distinguished by stem vowels) and the appearance of a back-vowel-front-vowel ablaut with verbs is mentioned, and tenses, modes and other features such as the indication of the object with the verbs through prefixes briefly referred to.

The person-number markers denoting the subject are suffixes and appear in different allomorphic forms according to the conjugational class of the verb to which they are added. For instance, with class I verbs they are as follows:

	1st	2nd	3rd
sg	-u-	-in-	-i-
dl	-uʔ-	-iʔ-	
pl	-un-	-i-	

Characteristically, there is formal identity of the markers of the 2nd and 3rd persons in dual and plural (see 2.5.2.3.).
Example: fili-d-iʔ-e = *they two died* = ([*die*: in past stem-allomorphic form]-[past]-[3rd dl subject]-[indicative-declarative]).

The (direct and indirect) object prefixes with verbs are formally identical with the obligatory possessive prefixes appearing with inalienably possessed nouns (see above), e.g. ta-(a)mi-d-un-e = *we gave (it) to them two* = ([3rd dl object]-[*give*]-[past]-[1st pl subject]-[indicative-declarative]).

Sentence-medial verb forms in Yagaria are briefly touched upon in (III) 7.5.3. Two incompletely different sets of subject markers occur with them according to whether the subject of the medial verb form is identical, or not identical, with that of the verb in the subsequent clause.

Identical subjects:

	1st	2nd	3rd
sg	-da	-ka	-na
dl	-taʔa		-daʔa
pl	-ta		-da

Different subject (anticipatory subject markers):

	1st	2nd	3rd
sg	-da	-ka	-ni
dl	-taʔa	-tati	-ti
pl	-ta	-tapi	-pi

With identical subjects, the medial verb forms can be inflected for progression or completion of the action denoted by the medial verb.
Examples: ge havi-lo-da o-d-u-e = *having heard (it), I came = talk* ([*hear*]-[completion]-[1st sg subject in medial verbs]) ([*come*]-[past]-[1st sg subject in final verb]-[indicative-declarative]), no-fili-na banuge da-hapei-d-i-e = *while he was dying, he said good-bye to me* = ([progressive]-[*die*]-[3rd sg subject in identical subject medial verbs]) (last-word) ([1st sg object]-[*say*]-[past]-[3rd sg subject in final verbs]-[indicative-declarative]).

With non-identical subjects, medial verbs are inflected for the subject of the medial verb and anticipatorily, for that of the verb of the following clause, and also for tense and subject change.
Example: **ba de-d-aʔ-aga-ta gayale ta-(a)mi-d-un-e** = *after they two had eaten the sweet potatoes we gave them two pork = sweet potuto* ([*eat*: in non-sg subject allomorphic form]-[past]-[3rd dl subject]-[change of subject]-[1st pl anticipated medial verb subject]) *pig* ([3rd dl object]-[*give*]-[past]-[1st pl subject in final verbs]-[indicative-declarative]).

2.7.2.2.5.4. *The Central Family*

Phonologically, Central Family languages are characterised by the presence of several lateral phonemes including laterally released stops, consonant clustering and complex suprasegmental systems including some tonal features, though the latter play a subordinate role. The glottal stop phoneme is absent.

Their pronoun systems show a prevalence of set I forms (see 2.3.3.2.), but set III forms (see 2.3.3.4.) are markedly in evidence.

The Central Family languages are structurally quite similar to each other, but contrast in a few respects with those of other families of the East New Guinea Highlands Stock. So, for instance, the covert noun classes through existential verbs which are a characteristic of Trans-New Guinea Phylum languages appear to be dependent on an animate-inanimate, and permanent-non-permanent contrast, rather than on features of shape and posture as in other Trans-New Guinea Phylum languages (A. Lang 1971, 1975). In contrast to the Eastern and the majority of the East-Central Family languages and dialects, medial verbs in Central Family languages do not show anticipatory indication of the subject of the following clause. Nouns lack a range of relational suffixes, and an agentive suffix is absent. Both inalienably and alienably possessed nouns have possessive suffixes which however are obligatory with the former.

A few notes on **Chimbu proper (Kuman)** (Trefry 1969, and notes on Kuman (Middle Chimbu (Goglme) and Mingende dialect) kindly put at the disposal of the present writer by J. Z'graggen) may be given for illustration:

Phonology

Consonants:	p	t	k
	b	d	g
		s	
	m	n	
		r	
		l	
	w	y	g±

b d g are prenasalised medially, and prenasalised allophones occur with non-prenasalised ones in free variation initially.

Vowels:

i		u
e		o
	a	

Z'graggen observes the rare occurrence of æ, apparently in phonemic contrast with a in minimal pairs.

Suprasegmentals: stress and some tonal features in combination.

Morphophonemic changes: numerous and complex.

Nouns: Inalienably possessed nouns occur with obligatory possessive suffixes. These suffixes, like most Kuman affixes, have numerous allomorphic forms.

	1st	2nd	3rd
sg	-na	-n	-mo
pl all persons: -no			

Examples: na bawa-na = *my uncle*, ene dirabi-n = *your* (sg) *tongue*.

Pronouns: As in Awa of the Eastern Family (see 2.7.2.2.5.2. above), the person and number distinctions in the personal pronouns and the possessive suffixes are restricted and rudimentary when compared with the indication of these categories with the subject marking on the verb.

The personal pronouns are as follows:

	1st	2nd	3rd
sg	na	ene	ye
pl	no		

Verbs: Verbs are final or medial. Medial verbs occur in coordinate or dependent non-final clauses and are formally different in these two types of medial clauses.

Final verbs are characterised by the presence of a particular set of subject suffixes which are obligatorily followed by a declarative suffix. The forms of the latter is -ka, with numerous allomorphs.

Because of the extensive morphophonemic changes affecting the subject suffixes and their numerous allomorphic forms, they are open to different interpretations. So, for instance, Trefry regards the 1st sg and 2nd/3rd pl subject suffixes as containing -gɨ-, whereas Z'graggen looks upon this as an allomorph of the suffix -nagɨ- denoting the inceptive aspect postulated by him, but not recognised by Trefry.

Trefry gives the following major allomorphic forms of the subject suffixes:

	1st	2nd	3rd
sg	-gɨ, -i	-in	-u-u, -bu
dl	-bugɨ	-buri	
pl	-mun	-gɨum	

Z'graggen gives the following forms:

	1st	2nd	3rd
sg	-y	-n	-um ∿ -bu
dl	-ubugɨ	-ibri ∿ -iri	
pl	-umun	-im	

Examples: (Trefry) ene kan-a-buri-ka = *you two will see = you* ([*see*]-[imperfect]-[2nd/3rd dl subject]-[declarative]). Z'graggen gives this form as ene suo kan-a-bri-ka = *you two* ([*see*]-[inceptive]-[2nd/3rd dl subject]-[declarative]).; (Trefry) na kan-a-gɨ-ka = *I will see = I* ([*see*]--[imperfect]-[1st sg subject]-[declarative]). Z'graggen regards this as na kan-agɨ-Ø-ka = *I* ([*see*]-[inceptive]-[1st sg subject]-[declarative]).

Tense is not expressed in the verb.

The interrogative is denoted by the suffix -o replacing the declarative suffix, e.g. na kan-a-gɨ-o = *will I see?* Z'graggen mentions that the interrogative suffix is -e if an interrogative pronoun is present in the sentence.

The negative marker is -kir- (with allomorphic forms) added to the stem (Z'graggen postulates -kre- for his completive and continuative aspects, and -kragɨ- for his inceptive aspect), e.g. (Trefry) na kan-i-ga = *I saw = I* ([*see*]-[1st sg subject]-[declarative]): zero aspect marker = perfective; na kan-kir-i-ka = *I didn't see = I* ([*see*]-[negative]-[1st sg subject]-[declarative]): zero aspect marker = perfective.

According to Trefry, imperfective and perfective aspect are indicated with final verb forms: Ø = perfective, -a- = imperfective. However, Z'graggen regards zero aspect marking as denoting a continuative aspect, -nagɨ- with allomorphic forms including -a- as indicating an inceptive aspect, and -konde- as denoting a completive aspect.

The object is not indicated in verb forms, only *-re- = *give* shows obligatory prefixing of the personal pronouns (with morphophonemic changes) to denote the indirect object, i.e. nare- = *give to 1st sg*, te- = *give to 2nd or 3rd sg*, nore- = *give to 1st dl or pl*, yere- = *give to 2nd or 3rd dl or pl.*

Medial verbs in coordinate clauses with no change of subject consist either of the verb stem only (denoting simultaneity or quick succession), or of verb stem + -tire ∿ -dire denoting successivity, e.g. na pi kaniga = *I went and saw = I go (I-saw)*; ye kua ka-dire ye sugua = *he saw, and then shot the bird = he bird (see*-medial*) he shot.*

Medial verbs in coordinate clauses with change of subject appear with the same suffixes as final verbs, but no aspects are marked, and the declarative marker has the final vowel -o, e.g. ene ka-buri-ko = *you two saw (see, will see) and... = you* ([*see*: in allomorphic form]-[2nd/3rd dl subject]-[declarative in medial form]).

Medial verbs in dependent clauses have a special set of suffixes which denote dependence, person and number of the subject of the medial verb, and optionally negation. The suffixes, in the affirmative, are as follows:

	1st	2nd	3rd
sg	-ibo	-in	-an
dl	-obugɨ	-iburi	
pl	-omun	-ibi	

Examples: na kan-ibo = *when (because, if) I saw,...,* ye ene kan-kir-ibi ye bugɨa kunolugua = *because you* (pl) *did not see him, he stole the pig = he you* ([*see*]-[negative]-[2nd/3rd pl subject in medial forms]) *he pig stole.*

2.7.2.2.5.5. *The West-Central Family*

In their phonologies, members of the West-Central Family are characterised by the presence of palatalised consonant phonemes and the universal appearance of complex tonal systems. The glottal stop phoneme is absent, and so are complex syllable structures.

The pronoun systems show a strong presence of set II and set III forms in addition to the basic Trans-New Guinea Phylum set I forms (see 2.3.3.1.-3.).

The languages of the West-Central Family display considerable structural similarity, though Huli stands a little apart. Their features are low incidence of possessive affixes with nouns, i.e. the almost complete absence of possessive affixes with nouns and almost no distinction between inalienably and alienably possessed nouns, the presence of two imperatives (immediate, and deferred or late), the appearance of special modal suffixes with verb forms denoting attitudes of the speaker towards the action referred to by him, i.e. whether he himself has witnessed it, is reporting from hearsay, or deducing from evidence, etc. Benefactive forms are common and elaborate, and so are sentence-medial verb forms, but no anticipatory marking of the subject of the following clause is present with medial verbs.

A few brief notes on Enga (A. Lang 1973) may be added here:

Phonology

Consonants:

	p	t		k
	b	d	j	g
	m	n	nʸ	ŋ
		l	lʸ	
		s		
	w		y	

Vowels:

i		u
e		o
	a	

Suprasegmentals: two tonemes: high and low.
Morphophonemic changes are of comparatively low complexity.

Nouns: Relation markers are suffixes and denote agentive, associative, instrumental, possessive, locative, temporal, and vocative, e.g. akali-mi mena doko pia = *the man killed the pig* = (*man*-agentive) *pig* determiner ([*hit*]-[past]-[3rd sg subject]).

Pronouns:

	1st	2nd	3rd
sg	namba	emba	baa
dl	nalimba	nyalambo	
pl	naima	nyakama	

While the 2nd and 3rd dual and plural pronoun forms given are identical, other forms denoting one of these categories exclusively exist.

Verbs: Verbs are final and medial. With final verbs, five tenses (far past, near past, past, present and future) are distinguished. Tense, person and number are marked by suffixes, the latter two portmanteau and differing to some extent in the various tenses. The verb stems and tense markers show allomorphic forms, e.g. l-e-o = *I spoke* (far past) = ([*speak* in far past allomorphic form]-[far past]-[1st sg subject]); la-p-u = *I spoke* (near past) = ([*speak*]-[near past]-[1st sg subject]); la-p-umba = *we two spoke* (near past) = ([*speak*]-[near past]-[1st dl subject]); la-t-ambi = *we two will speak* = ([*speak*]-[future]-[1st dl subject]).

The negative is indicated by the prefix na-, and the interrogative by the suffix -pe ∿ -pi. A declarative suffix -mo ∿ -no appears in certain tenses and person-number forms, e.g. le-l-e-no = *you* (sg) *speak* = ([*speak* in present allomorphic form]-[present]-[2nd sg subject]-[declarative]).

As in other languages of the East New Guinea Highlands Stock, a distinction is made between medial verb forms whose subjects are identical,

or not identical, with those of the following clause. With the former, the temporal suffixes appear after the verb stem, whereas with the latter, the verb shows the final verb tense, person and number markers with special suffixes.

The temporal suffixes added to medial verb forms with identical subjects denote simultaneity or successivity of the actions referred to by the medial and the following verb, e.g. **baa-me pa-o kalai p-i-a** = *he went and worked (at the same time)* = (*he*-agentive ([*go*]-[simultaneity of actions]) *work* ([*do*]-[past]-[3rd sg subject]).

With medial verbs with non-identical subjects, the suffix **-pa** appears to denote both simultaneity or successivity, e.g. **namba-me p-e-o-pa baa-me kalai p-i-a** = *I went and he worked* = (*I*-agentive) ([*go*]-[past]-[1st sg subject]-[change of subject]) (*he*-agentive) *work* ([*do*]-[past] [3rd sg subject]).

In addition to these forms, medial forms with causal and result suffixes, conditional suffixes (denoting real or irreal conditional), concessive, purposive, desiderative, etc. suffixes occur.

Two different types of imperatives exist, an immediate and a deferred (or late) imperative. Imperative forms appear for all nine persons and numbers, and imperative forms enter into a number of other verbal constructions.

Aspectual suffixes denoting intensive, completive, instantaneousness, repetitive, simulative, progressive, conformative, comprehensive, etc. are present, and special reciprocal, causative, contingency etc. forms occur. The direction of an action, with six possible directions distinguished, is denoted by special suffixes added to the verb stem.

A special feature of Enga (and other languages of the West-Central Family) is the distinction between references to something that is meant to include or be for the benefit of, the hearer, or otherwise. This is denoted by suffixes added to the stem: **-ka-** indicates the inclusion of the speaker or hearer but the exclusion of any third person, **-kamai-** the exclusion of the speaker or hearer; e.g. **akali doko-me mena doko namba-nya** (or **emba-nya**) **pya-k-e-a** = *the man killed the pig for me (or you* sg*)* = *man* (determiner-agentive) *pig* determiner (*I*-benefactive)(or (*you* sg-benefactive) ([*hit*]-[benefactive including speaker or hearer]-[past]-[3rd sg subject]); but **akali doko-me mena doko baa-nya pya-kamai-y-a** = *the man killed the pig for him* = *man* (determiner-agentive) *pig* determiner (*he*-benefactive) ([*hit*]-[benefactive excluding speaker or hearer]-[past]-[3rd sg subject]).

A set of suffixes or particles occurs which indicate the speaker's attitude to an event etc. and what he can sense or deduce about it. For instance, the particle **lamo** added to a statement indicates that the statement made is based on deduction, e.g. **mena doko namba-nya lamo** =

this is obviously my pig = pig determiner (*I*-possessive) deduction. Similarly, the suffix -lami denotes that an event referred to is a tale or myth, e.g. yana-pa saa-pa ly-i-ambi-lami = *they say that dogs and possums danced* = (*dog*-conjunction) (*possum*-conjunction) ([*dance*]-[past]-[2nd/3rd dl subject]-[mythologically]).

2.7.2.2.5.6. *The Kalam Family*

The three languages of the Kalam Family were originally believed to constitute a separate stock related to the East New Guinea Highlands Stock on the phylum level (Wurm 1960). However, as a result of Pawley's (1966) work, their closer relationship to the East New Guinea Highlands Stock was recognised, and they were included into it as forming a family member (Wurm 1971).

The reasons for the classificatory difficulties surrounding the languages of the Kalam Family lie in their nature which is highly aberrant in some ways and not aberrant in others. Recent studies and re-interpretations of earlier findings (Biggs 1963, Pawley 1966, Laycock: personal communication) have revealed the following with regard to Kalam, the best-studied member of the family:

It shows an interesting mixed composition: its phonology is largely purely of the Sepik-Ramu Phylum type (see 2.11. in this volume) as opposed to the Trans-New Guinea Phylum type (see 2.5.2.1.), its pronominal forms and systems are very much like those of the Madang-Adelbert Range Sub-Phylum (see 2.8.2.3. in this volume), its structure and typology in general is very predominantly like that of the other East New Guinea Highlands Stock languages and it shares more regional typological features with the East-Central and Eastern Families than with any other family in the stock (Pawley 1966), and its vocabulary is a mixture of the three, with the East New Guinea Highlands Stock element somewhat predominating. This mixed nature of Kalam is understandable in the light of linguistic prehistory (see 3.4.1. in this volume).

In abstract, its phonology is characterised by the presence of four linear distinctions with stops and nasals, with a palatal point of articulation figuring in the series. Only three vowel phonemes appear, and no complex suprasegmental system is present. Numerous consonant clusters are in evidence, with the consonant members in sequences separated by a predictable, non-phonemic shwa vowel.

In its morphological structure, Kalam parallels the languages of the other East New Guinea Highlands Stock families discussed so far fairly closely, with some of its features quite similar to those found in the Eastern and East-Central Families, and with others more like those of the West-Central and the Central Families.

In particular, the person-number subject markers with verbs in Kalam (and Kobon) fit in very well with those observable in languages of the Eastern and East-Central Families (Wurm 1965) and Eastern-East-Central-Kalam Family proto-forms have been proposed by Pawley (1966). The forms involved are as follows:

Eastern Family:

		Gadsup	Auyana, Usarufa	Awa
sg	1	u	un	u?
	2	on∧	an	ona?
	3	i	ay ∿ i	i?
dl	1	u	uy	uya?
	2, 3	o	ay	oya?
pl	1	u	un	una?
	2, 3	o	a	o?

East-Central Family:

		Gende	Yabiyufa	Asaro, Gahuku	Benabena	Kamano, Kanite, Keiagana, Yate, Yagaria	Fore	Gimi
sg	1	u	u	u	u	u	uw	u
	2	an	an	an	an	an	a:n	an
	3	(a)i	a ∿ i	i	i	i	iy	i
dl	1	ur	u	usi	u?i	u?	us	ur
	2, 3	ar	ai	asi	a?i	a?	a:s	ar
pl	1	un	un	un	un	un	un	un
	2, 3	a	a	a	a	a	a:w	a

Kalam Family:

		Kalam	Kobon	*proto East-East Central-Kalam
sg	1	in	in	*u
	2	an	an	*an
	3	a	a	*i
dl	1	ut	ul	*uR
	2, 3	it	əl	*aR
pl	1	un	un	*un
	2	m	im	*a
	3	ay	al	

At the same time, Kalam has object marking with verbs which is somewhat comparable to that encountered in the Eastern and East-Central Families (see above 2.7.2.2.5.2.-3.), though perhaps more like that met with in Huon Peninsula Trans-New Guinea Phylum languages (2.8.1.4.10. in this volume).

While the languages of the families discussed so far show identity of the forms of the second and third person subject markers in the dual and plural numbers, this feature is restricted in Kalam and Kobon to the dual number.

In the form and nature of sentence-medial verb forms, Kalam is similar to the languages of the West-Central Family, and the Central Family (see 2.7.2.2.5.4.-5.). In other features of its verb morphology (the presence of stem allomorphs etc.) it resembles the other families discussed so far, especially the Eastern and East-Central Families.

In its noun morphology, Kalam parallels the Central Family languages most closely. Relational suffixes are lacking, and an agentive suffix is absent. Possessive affixes (prefixed) appear optionally with a number of relationship terms.

2.7.2.2.5.7. *The Wiru Family*

The problems of the classification of Wiru (Kerr 1967, and the author's field notes) which is now classified as constituting a family-level isolate within the East New Guinea Highlands Stock, have been briefly touched upon above in 2.7.2.2.4.

In its phonological and structural characteristics, Wiru is, in general, closest to the languages of the West-Central Family, but there are quite a number of differences in detail.

Phonologically, it is characterised by the presence of nasal vowels, a simple syllable structure and a word-level tonal system with low functional load.

With the personal pronouns, a very strong presence of set III (see 2.3.3.4.) is observable, and possession is indicated through possessive forms of the personal pronouns. Special location-in-space pronouns are in evidence.

On the morphological level, Wiru displays several systems which in some ways constitute simplified versions of West-Central Family ones. So, for instance, only three tenses, present, past and future, are encountered with the verb; in the person marking with the verb, no dual number appears though it is present in the pronoun system, and in some final verb forms, indicating neutral situations, tense and person markers are entirely absent. Regarding the special modal affixes found in West-

Central Family languages and denoting attitudes on the part of the speaker towards the action referred to, Wiru shows only one which indicates a reported or inferred situation.

The following may be noted in addition:

Phonology

Consonants:

p	t	k
mb	nd	ŋg
m	n	
	l	
	y	
w		

Vowels:

i	u
e	o
a	

A series-generating feature of nasalisation is present.

Suprasegmentals: A two-tone system on the word level is present, with low functional load.

Nouns: The noun inflection in Wiru compares well with the West-Central Family type, and an agentive is present.

Pronouns: In the personal pronoun system, three persons and three numbers (singular, dual and plural) are distinguished, but in the dual, the forms for the second and third persons are identical.

	1st	2nd	3rd
sg	no	ne	one
dl	tota	kita	
pl	toto	kiwi	kini

With the possessive pronouns, only singular and plural forms are distinguished. With the latter, the second and third person forms are identical.

	1st	2nd	3rd
sg	anu	neke	one
pl	tone	kini	

Verbs: Final and medial verbs are distinguished. With final verbs, portmanteau suffixes denoting the person and number of the subject appear. Only singular and non-singular forms are distinguished, and speaker and non-speaker forms. The speaker plural and non-speaker singular forms are identical:

	speaker (1st)	non-speaker (2nd,3rd)
sg	u	o
pl	o	i

With medial verbs with subject identity in the medial clause and the following clause, the distinction of speaker and non-speaker forms in the suffixes is limited to the singular:

	speaker	non-speaker
sg	ne	me
pl	te	

In combination with tense markings, the following forms are present:

Final verbs: present k, past ko, future o.

	sg		pl	
	speaker	non-speaker	speaker	non-speaker
present	ku	ko	ko	ki
past	kou	ka	koo	koi
future	ou	ɔo	oo	oi

Medial verbs: present ø, past ke, future de.

	sg		pl
	speaker	non-speaker	
present	ane	a	a
past	kene	kome	kete
future	adene	ademe	adete

In medial clauses with subject difference in the medial clause and the following clause, the medial verb takes the ordinary final verb tense and person-number suffixes, plus a special suffix to denote the change of subject in the following clause. A difference is made between identity and non-identity of time as referred to in the two clauses.

Other features of the verb include an imperative system that is simpler than the one encountered in the West-Central Family, the same importance attached to benefactive forms as in that family, inflection for neutral situations, only one modal affix denoting the speaker's attitude to the action referred to, indication of transitivity, causative, aspects, and of directions of the action. The negative is expressed by a suffix which is formally identical with that encountered in several East-Central Family languages, and the interrogative by the suffix -pe which tallies with a West-Central Family suffix.

2.7.2.2.5.8. *The Kenati Family*

Very little is known of the structure of Kenati as has been indicated in 2.7.2.2.4. However, lexicostatistical evidence gives Kenati a position intermediate between that of the Eastern and the East-Central Families of the stock.

2.7.2.2.6. Substrata in East New Guinea Highlands Stock Languages

Substratum influence is noticeable in several parts of the East New Guinea Highlands Stock. In the south-west of its area, i.e. in southern parts of the West-Central Family and in the Wiru family-level Isolate, nasal vowel phonemes appear with great frequency - a feature also present in the languages adjoining that region in the south, south-west and south-east and belonging to other stocks and sub-phyla in the Trans-New Guinea Phylum. This characteristic may be attributable to a regional substratum which in most of its area seems to be linked with a) the simplification of the sentence-medial verb phenomena or even their defective or rudimentary nature or total absence, b) the simplification, or even absence, of subject person and number marking with verbs, and c) a proliferation of aspectual distinctions within the verb (Franklin and Voorhoeve 1973). Within the East New Guinea Highlands Stock, this substratum manifests itself largely through the presence of nasal vowels (see above) and c) only, whereas a) and b) are generally only met within areas outside it; except for the Wiru family-level Isolate.

The strong presence of set III pronoun forms in languages of the Kalam and Central Families and in Wiru, and to a lesser extent in Central and Eastern Family languages, also comes under the heading of substratum influence and can be explained in terms of linguistic prehistory (see 3.4.1.). Another comparable substratum influence manifesting itself in the stronger presence of set II pronouns than is usually the case with East New Guinea Highlands Stock languages is observable in languages of the Eastern Family.

2.7.3. THE KUTUBUAN STOCK

2.7.3.1. *INTRODUCTORY REMARKS*

The special problems surrounding the classification of the languages included here in what is being referred to as the Kutubuan Stock, the steps leading to the establishment of this stock, the membership of this stock to the Central and South New Guinea, and Kutubuan, Super-Stock, and the recent challenge to the existence of the Kutubuan Stock by Franklin (see 2.14.2. in this volume) have been reviewed above in 2.7.1. and 2.7.2.1. and need not be discussed here again.

Studies of some of the languages of the stock were undertaken by J. Rule (1952), W.M. Rule (1965), and Loeweke and May (1965, 1966). Several unpublished manuscripts of studies of Kutubuan Stock languages are held by the New Guinea Branch of the Summer Institute of Linguistics and the Asia Pacific Christian Mission (formerly Unevangelized Field Mission).

2.7.3.2. *MEMBER FAMILIES OF THE KUTUBUAN STOCK AND THEIR GEOGRAPHICAL LOCATION*

The two families constituting the Kutubuan Stock are the West Kutubu Family and the East Kutubu Family. They are both found in the extreme south of the Southern Highlands District, with the West Kutubu Family located north and south of the Leonard Murray Mountains and extending towards the Upper Kikori River, and the East Kutubu Family situated east of Lake Kutubu, on the main island of the lake, and extending some distance to the south-east to the Waga River.

2.7.3.3. *COMPOSITION OF THE KUTUBUAN STOCK*

The internal composition of the Kutubuan Stock (4000)[14] is as follows:

1)	West Kutubu Family		1,200
	Fasu	750	
	Some	150	
	Namumi	300	
2)	East Kutubu Family		2,800
	Foe	2,500	
	Fiwaga	300?	

2.7.3.4. *INTERRELATIONSHIPS WITHIN THE KUTUBUAN STOCK*

The interrelationship of the languages within the two families is very close. In the West Kutubu Family, percentages of shared basic vocabulary cognates lie between the mid-fifties and mid-sixties, and the two members of the East Kutubu Family share over sixty percent basic vocabulary cognates.

Interrelationships across family boundaries are comparatively distant, both on the lexical and on the structural and typological levels. Percentages of basic vocabulary cognates shared across family boundaries range from the mid to high teens only, but regular sound correspondences are in evidence.

2.7.3.5. *TYPOLOGICAL AND STRUCTURAL FEATURES OF THE KUTUBUAN STOCK LANGUAGES*

2.7.3.5.1. General Remarks

The structural and typological features of the languages of the Kutubuan Stock are basically comparable to those mentioned in 2.3.2.5. and 2.5.2. in this volume as characteristic of the Trans-New Guinea Phylum, with strong allowances made for the presence of the substratum features referred to above in 2.7.2.2.6. Of those characteristics, the nasal vowels are strongly present, and so is the multiplicity as aspectual distinctions within the verb, especially in the East Kutubu Family. Person marking with verbs is present in the East Kutubu Family, but number marking is lacking. Sentence-medial verb phenomena, are in evidence, but are simplified when compared with other Trans-New Guinea Phylum languages. With pronoun forms, set I forms (see 2.3.3.2.) prevail, but set III forms (see 2.3.3.4.) are strongly in evidence.

A few notes may be added here on Fasu (Loeweke and May 1965, 1966, Franklin and Voorhoeve 1973) and Foe (J. Rule 1952, W.M. Rule 1965, Franklin and Voorhoeve 1973) as representatives of the two families.

2.7.3.5.2. Fasu (West Kutubu Family)

Phonology

Consonants:

p	t	k
f	s	h
m	n	
	r	
w	y	

Vowels:

i		u
e		o
	a	

Phonemic nasalisation is present.

Suprasegmentals: A two-tone system appears.

Morphology

Nouns: An agentive (marked by -mo) is present, and relation markers are suffixes.

Pronouns: Fasu has three kinds of personal pronouns, one called ergative and functioning as the subject of intransitive verbs and the object of transitive ones, one nominative which serves as the subject of transitive clauses and also as possessive, and the third reflexive which constitutes the referent in clauses. Tone mostly disambiguates apparent homophonous forms.

		ergative	nominative	reflexive
sg	1	ano	nòmo	nì
	2	né	nómo	nǐ
	3	e	epo	ipi
dl	1	eto	etapo	itì
	2	teto	tetápo	titi
	3	teta	tetapò	tati
pl	1	isu	isiapo	isina
	2	re	repo	namina
	3	i	ipu	namina

Verbs: Final and medial verb forms are distinguished, and with both, intransitive, transitive and stative are contrastively marked. Subject identity and non-identity with medial verbs are distinguished, but only defectively. No indication of the person or number of the subject with verbs is found, but an indicative-declarative marker is met with. Four tenses: neutral, present, future and customary, are in evidence and are marked by suffixes. One attitude-marker referring to actions observed by the speaker is found. Two imperatives, immediate and deferred, are present, and also a large number of aspects and modes, e.g. completive, consecutive, purposive, causative etc. The interrogative is marked by the suffix -re, and the negative by the suffix -fa.

2.7.3.5.3. Foe (East Kutubu Family)

Phonology

Consonants:

	t	k	ʔ
b	d	g	
f	s		h
v			
m	n		
	r		
w	y		

Vowels:

i	u
e	o
a	

Phonemic nasalisation is present.

Suprasegmentals: A two-tone system is present.

Morphology

Nouns: An agentive (marked by -mo) is present, and relation marking is by suffixes.

Pronouns: Only one set of personal pronouns appears. In the first person non-singular, inclusive and exclusive forms are distinguished.

	1st		2nd	3rd
	incl	excl		
sg		na	na?a	yo
dl	yage	ya?a	haga?a	
pl	yia	yiya	ha?a	ya?a

Verbs: Final and medial verb forms are distinguished. A distinction is made between subject identity and non-identity with medial verbs, but is defective in part. The person of the subject, but not its number, is indicated with final verbs through suffixes which vary for tense and the indication is more a speaker-verb than a subject-verb reference. In some verb forms, person marking is absent. Four tenses: present continuous, near past, far past, and future, are found and denoted by suffixes and the form of the subject markers. The indication of attitudes of the speaker to actions is complex: factual, seen, unseen, deduced, visible evidence and previous evidence are contrastively marked by suffixes. Two imperatives, immediate and deferred, are met with, and a large number of aspects and modes are present. Two negative forms are found with imperatives, one for immediate and one for deferred ones. Two different interrogative suffixes are present in Foe: -be with verbs, and -gebe with nouns and pronouns.

2.7.3.6. *SUBSTRATUM INFLUENCE IN KUTUBUAN STOCK LANGUAGES*

The Kutubuan Stock languages show a strong influence of the substratum mentioned above in 2.7.2.2.6. as occurring in the south-western part of the East New Guinea Highlands Stock.

2.7.4. THE ANGAN STOCK-LEVEL FAMILY

2.7.4.1. *INTRODUCTORY REMARKS*

The possibility of the existence of a group of closely interrelated languages in the area known today to be occupied by the Angan Family was mentioned in the early sixties by the present writer (Wurm 1960), Capell (1962), and C. and F. Voegelin (1965). The family - at first thought to be a stock (Wurm 1971) because of the lexicostatistically aberrant nature of one of its members - was definitely established by Lloyd, R. (1969), and Lloyd, J. and A. Healey (1970), with Lloyd, R. (1973) providing a comprehensive statement, and definitely establishing the group as a family and determining its constituent members.

The inclusion of the Angan Family into the Trans-New Guinea Phylum has had a somewhat checkered history. In Wurm 1971, the then Angan Stock was one of the groups of which it was thought that they might potentially be included with the Central New Guinea Macro-Phylum - the fore-runner of the present Trans-New Guinea Phylum - and strong indications supporting its membership to it were believed to be present. Further studies carried out since by the present writer (Wurm 1976, see also 2.4.1.5.1. in this volume) demonstrated that a quite significant number of Angan basic vocabulary items tied in well with Trans-New Guinea Phylum cognate chains such as those set up by McElhanon and Voorhoeve (1970), and constituted reflexes of Trans-New Guinea Phylum proto-forms. It could also be established that the Angan personal pronouns were typical set I (see 2.3.3.2.) Trans-New Guinea Phylum pronouns, and that some Angan structural features such as the prefixed object markers occurring with some verbs, medial verb forms etc. were of Trans-New Guinea Phylum type - in fact, the object markers mentioned were found to be formally near-identical with those met with in several other Trans-New Guinea Phylum stocks. Substrata features are admittedly strongly in evidence, and there may be good reasons to believe that the Angan people were not originally speakers of a Trans-New Guinea Phylum language: the somewhat aberrant nature of the Angan Family languages points in some ways to their possibly secondary Trans-New Guinea Phylum membership which may be attributable to the overlaying of a language element closely related to, or identical with, one strongly in evidence in the eastern part of the East New Guinea Highlands Stock, upon an earlier, presumably unrelated, language type (see also 2.5.3.3.1.). However, the present writer is of the opinion that this substratum influence is not extensive enough to justify the assignment of sub-phylum status to the Angan Family. At the same time, its apparently quite considerable differences from neighbouring language groups have been pointed out by other linguists (such as Franklin 1973a, and in 2.14.2. in this volume; R. Lloyd 1973) and, in the present writer's view, overstressed. The assessment of the vocabulary of Angan languages by the present writer as mentioned above, indicates that its lexical relationship to other Trans-New Guinea Phylum languages in general is apparently higher than may be suggested by the low percentage figures of shared basic vocabulary cognates arrived at as a result of the lexicostatistical comparison, by the inspection method, of individual Angan Family languages with individual East New Guinea Highlands Stock languages for instance. Also, it has been mentioned above that structural and typological agreements between Angan languages and in particular, languages of the East-Central Family of the East New Guinea Highlands Stock are quite pronounced (Lloyd, R. 1973); they extend to great formal similarity and even near-identity

of a number of function morphemes such as object prefixes and subject suffixes with verbs, and negative affixes with them.

In the light of the evidence mentioned above it may appear quite justifiable to include the Angan languages into the Trans-New Guinea Phylum and as constituting an ordinary, i.e. not sub-phylic, family-level stock in them.

Some of the detailed studies existing of some member languages of the Angan Family have been written by W. and L. Oates (1968), Lloyd, R. (1969) and West (1973). A number of unpublished manuscripts of studies of Angan Family languages are in the hands of the New Guinea Branch of the Summer Institute of Linguistics, and the New Tribes Mission.

2.7.4.2. *GEOGRAPHICAL LOCATION OF THE ANGAN FAMILY*

The Angan Family occupies the border area between the Eastern Highlands, Morobe and Gulf Districts, and the greater part of the area occupied by it is approximately evenly divided between the last two. It extends from the Lamari River in the Eastern Highlands District to the Upper Watut and the Bulolo Rivers in the Morobe District - and in the Gulf District, it stretches from its eastern border to the Vailala River, and spreads to within a few miles of the coast.

Nearly half of the Angan Family area, in the south and east, is occupied by Kapau, whereas the other eleven languages of the family are fairly evenly distributed in the north-western part, with a group of the Yagwoia and the Angaataha speakers each geographically separated from their respective main bodies of speakers.

2.7.4.3. *COMPOSITION OF THE ANGAN FAMILY*

The composition of the Angan Family (64,500)[15] is as follows:

a)	Main Sub-Family		63,500
	Simbari[16]	2,400	
	Baruya[16]	4,400	
	Ampale[17]	3,000	
	Kawacha	30	
	Kamasa	50	
	Yagwoia	6,100	
	Ankave	1,500	
	Ivori[18]	400	
	Lohiki[18]	850	
	Menya[19]	12,400	
	Kapau[19]	32,300	
b)	Angaataha sub-family-level Isolate		1,000

2.7.4.4. *INTERRELATIONSHIPS WITHIN THE ANGAN FAMILY*

The lexical relationship between the members of the Angan Family varies from very close (see the notes to 2.7.4.3.) to a medium-to-low family-level, with Angaataha rather aberrant and only barely within the family when considering its lexicostatistical sharing of cognates with the other Angan languages, though structurally and typologically it is somewhat closer to them. Structurally and typologically, the interrelationships of the Angan Family languages are generally closer than their respective lexical interrelationships.

2.7.4.5. *TYPOLOGICAL AND STRUCTURAL FEATURES OF THE ANGAN FAMILY LANGUAGES*

2.7.4.5.1. General Remarks

The structural and typological features of the Angan Family languages are, with a few notable exceptions, very much in keeping with those mentioned in 2.3.2.5. and 2.5.2. as typical of Trans-New Guinea Phylum languages. The main exceptions are: a) the presence of two genders in all the languages and a complex gender and class system with concord in at least one of them (Angaataha), with genders denoted by suffixed markers, and b) the appearance of verb prefixes indicating features which in other Trans-New Guinea Phylum stocks are mostly marked by suffixes, e.g. the indicative, imperative etc. The presence of somewhat complex syllable structures with initial consonant clusters is also a feature not as a rule met with in Trans-New Guinea Phylum languages. It seems that these aberrant features in otherwise fairly normal Trans-New Guinea Phylum type languages are, as has been suggested above in 2.7.4.1., attributable to substratum influence and reflect the superimposition of a language form of the Trans-New Guinea Phylum type upon an earlier, different language type.

A few notes on Baruya may be added here:

2.7.4.5.2. Baruya (Lloyd 1973)

Phonology

Consonants:	p	t	k	ʔ
	b	d	g	
	m	n	ŋ	
		l		
		r		
	w	y		

Vowels:

i	ɨ	u
e		o:
	a	ɑ:

Suprasegmentals: A phonemic pitch accent combining high pitch and stress is present.

Morphology

Nouns: A two-gender system is present and indicated by suffixes. Relation markers which include an agentive are suffixes. Cases are also denoted by clitics (see below under 'Pronouns').

Pronouns: No gender distinction is indicated in personal pronouns.

	1st	2nd	3rd
sg	nɨ-	gɨ-	ga-
dl	nɑ:rɨ-	kɨrɨ-	
pl	ne-	sarɨ-	ku-

With all of these, -mɨno appears as a suffixed element.

With pronouns, phrases and included clauses, clitics occur which are case markers and (except for pronouns) also show gender, person and number:
Masculine:

	1st	2nd	3rd
sg	-i-nyo	-i-gɨno	-lo
dl	-i-nɑ:lo	-rɑ:i-ʔɨlo	-rɑ:lo
pl	-i-nɑ:wo	-iʔɨlo	-rɑ:wo

Feminine:

	1st	2nd	3rd
sg	-ʔ-nyo	-ʔ-gɨno	-wo
dl	-ʔ-nɑ:lo	-wɑ:i-ʔɨlo	-wɑ:lo
pl	-n-nɑ:wo	-ŋ-iʔɨlo	-ŋo

Verbs: Verb roots are generally subdivided into active and stative. Some roots appear with indirect object prefixes:

	1st	2nd	3rd
sg	nyɨ-	gɨ-	wɨ-
dl	neʔɨ-	yɨʔɨ-	
pl	ne-		

Benefactive forms are frequent and formed by the suffix -y, e.g. dɨ-nyɨ-ram-y-ɨ = *hit (kill) it for me!* = ([imperative]-[*me*]-[*hit*]-[benefactive]-[2nd sg subject with imperatives]).

Final (independent) and medial (dependent) verbs are distinguished, as well as subjunctive and included verbs. With final verbs, tense and the person and number of the subject are indicated by suffixes. The subject suffixes differ somewhat in the various tenses, moods and aspects, e.g.

		complete	incomplete	regular past	
sg	1	-ano	-eno	-eno	
	2	-ɑ:no	-ɨno	-ɨno	
	3	-ako	-ɨko	-ako	
dl	1	-olo	-olo	-olo	
	2, 3	-ɑ:lo	-ɨlo	-ɨlo	
pl	1	-ono	-ono	-ono	
	2, 3	-ɑ:wo	-ɑ:wo	-ewo	etc.

The subject suffixes listed are reflexes of the proto-forms listed in 2.7.2.2.5.6. for several families of the East New Guinea Highlands Stock and are one of the factors proving the comparatively close interrelationship of the Angan languages to other Trans-New Guinea Phylum stocks. Reflexes of these proto-forms occur in some other Trans-New Guinea Phylum stocks as well, so for instance, in languages of the Ok Family of the Central and South New Guinea Stock.

Baruya has several past tenses: nocturnal past (i.e. previous late afternoon or night), near past, regular past and far past, and two future tenses: desiderative and future, e.g. y-ag-eno = *I did it* = ([*do*]-[regular past]-[1st sg subject in regular past form]).

The negative consists of the prefix ma- and the suffix -y which precedes the tense or aspect suffix, e.g. ma-n-y-ɨw-ano = *I have not finished eating* = ([negative]-[*eat*]-[negative]-[complete] -[1st sg subject in complete aspect form]). The interrogative is denoted by the prefix da-.

With medial verbs, a distinction is made between future and non-future tense, simultaneity or successivity of the actions referred to in the two successive clauses, and identity or non-identity of the subjects of the verbs in the two successive clauses. The ordinary final verb subject suffixes play a part in them, e.g. kɑ-n-ɨw-ɑ:wo = *they have eaten and...* = ([change of subject]-[*eat*]-[complete]-[3rd pl subject in complete aspect form]); n-ev-a = *they ate and they...* = ([*eat*]-[3rd pl subject in past form < -ewo]-[same subject successive marker]).

2.7.4.6. *SUBSTRATUM INFLUENCE IN ANGAN FAMILY LANGUAGES*

The presence of a strong substratum in the Angan Family languages has already been mentioned and discussed above in 2.7.4.1.

2.7.5. THE TEBERAN-PAWAIAN SUB-PHYLUM-LEVEL SUPER-STOCK

2.7.5.1. *INTRODUCTORY REMARKS*

The languages included in the Teberan and Pawaian sub-phylum-level Families are in some ways rather aberrant when compared with other Trans-New Guinea Phylum languages (Wurm 1964), probably in part as a result of the strong presence of a substratum in them. It appears to be the same substratum as that referred to above in 2.7.2.2.6. in connection with languages in the south-western part of the East New Guinea Highlands Stock. At the same time, their lexicostatistical sharing of basic vocabulary cognates with other Trans-New Guinea Phylum languages is of a fairly low order, though they contain a number of reflexes of Trans-New Guinea Phylum proto-forms. In the light of these facts, it has been decided to assign sub-phylum status to both of them.

In 2.2.6.8. in this volume, the circumstances relating to the Pawaian language(s), whose relationship to other Trans-New Guinea Phylum languages had been previously regarded as particularly distant and doubtful, have been discussed in some detail, and mention is made of MacDonald's (1973) recent work which makes possible the inclusion of the Pawaian and Teberan Families into a super-stock.

2.7.5.2. *THE TEBERAN FAMILY*

2.7.5.2.1. Introductory Remarks

The Teberan Family was originally set up by Franklin (1968) after one of its languages, Mikaru (now called Daribi), had been classified by the present writer (Wurm, 1960, 1964) as distantly related to the East New Guinea Highlands Stock, and a Summer Institute of Linguistics team had subsequently worked in it. The first detailed discussion of the family was provided by MacDonald (1973) who also discussed Pawaian in his study.

2.7.5.2.2. Geographical Location of the Teberan Family

The Teberan Family is located in an area in the interior of the Gulf District of Papua New Guinea, and overlaps into the Chimbu and Southern Highlands Districts. More precisely, it occupies the country bordered by a line running from Karimui in the Chimbu District south to the headwaters of the Sirebi River, and then north towards the Kerabi Valley, then running on the northern side of the Erave River eastwards to the Tua River and back to Karimui (MacDonald 1973).

2.7.5.2.3. Composition of the Teberan Family, and the Interrelationship within it

The Teberan Family (8,000)[20] has only two members: Daribi (formerly called Mikaru) (5,500) and Polopa (2,500).

The relationship between the two languages is lexically not close: they share about 35% basic vocabulary cognates. Within the Polopa language, dialect diversity is great, and the language appears to consist of a chain of dialects whose geographically distant variants may not be mutually intelligible. The percentages of basic vocabulary cognates shared by such dialects fall below to well below 60%, according to MacDonald (1973).

2.7.5.2.4. Typological and Structural Features of Languages of the Teberan Family

2.7.5.2.4.1. *General Remarks*

The languages of the Teberan Family show typological and structural features which are basically similar to the ones mentioned in 2.3.2.5. and 2.5.2. in this volume as typical of the Trans-New Guinea Phylum languages, but strong allowances have to be made in this for the substratum referred to above in 2.7.2.2.6. In particular, the presence of nasal vowels, the rarity of person and number indication with verbs, and the simplicity of medial verb forms are attributable to this influence. Of other features, a simple syllable structure, the very strong presence of set III (see 2.3.3.4.) pronoun forms which overshadows that of typical Trans-New Guinea Phylum set I (see 2.3.3.2.) pronoun forms in the language, and the appearance of three different personal pronoun types may be mentioned.

A few notes on Daribi may be given (MacDonald 1973).

2.7.5.2.4.2. *Daribi*

Phonology

Consonants:

p	t	k	
p^h	t^h	k^h[21]	
	s		h
m	n		
	l		
w	y		

Vowels:

i	u
e	o
a	

Phonemic nasalisation is present.

Suprasegmentals: A two-tone system with low functional load is present.

Nouns: Relationship marking is by suffixes, and an agentive/instrument marker (-go) is present. No obligatorily possessed noun category - i.e. category with possessive affixes - is present.

Pronouns: Three kinds of personal pronouns are present in Daribi, a) one functioning as objects and as subjects of verbs lacking expressed objects; b) one in which the agentive suffix -go appears, as subjects with expressed objects, and c) one as possessives. Only singular and plural numbers are distinguished, though a dual can be formed with the help of the numeral si = *two* if necessary, e.g. the type b) pronoun 2nd dl is dagi-si-go.

The forms of the three kinds of pronouns are:

		a)	b)	c)
sg	1	ena	eno	ena
	2	nagi	nago	naga
	3	ãgã	ãgãĩ	ãgã
pl	1	da	dago	dena
	2	dagi	dagigo	duga
	3	augwadi	augwadigo	augwa

Verbs: Medial verbs are in evidence, but they are very simple and few in number. With final verbs, person and number of the subject is only rarely marked.

The vowels in verb stems often undergo changes when suffixes are added to the verbs. Tenses and aspects are indicated by suffixes - e.g. -bo denotes a present tense/incomplete aspect - and customary or habitual action by -bo-da, e.g. da-go we a-de sa-bo-da = *we get wives there customarily* = (*we*-agentive) *woman* (*there*-locative) (*obtain*-incomplete-[*customary = is*]).

The negative is denoted by -be, e.g. te bidi eno su-be = *I did not see that man = that man I* (*see*-negative). The interrogative is indicated by the suffix -we.

Several imperative forms are distinguished in Daribi.

2.7.5.2.5. Substratum Influence in the Teberan Family Languages

It has already been mentioned above in 2.7.5.1. that the substratum referred to in 2.7.2.2.6. is strongly present in the Teberan Family languages.

2.7.5.3. *THE PAWAIAN FAMILY*

Pawaian which is the eastern neighbour of the Teberan Family in the Gulf District of Papua New Guinea and overlaps into the Eastern Highlands and Chimbu Districts, was assumed by Franklin (1968) to constitute a two-language family, though more recent work (Franklin: personal communication; MacDonald 1973) seems to give fresh support to the previous assumption (Wurm 1971) that it constitutes only a language isolate with several dialects.

A discussion, in some detail, of its classificatory status has been given in 2.2.6.8. in this volume and need not be repeated here. Mention may however be made of Trefry's (1969, 1972) work in it.

The number of its speakers is estimated to be about 2,300 including all dialects.

Its typological and structural characteristics are, on a general level, quite similar to those of the Teberan Family languages, and the same substratum is strongly present in it.

Its **consonantal** inventory is simpler than that of Daribi:

p	t	k
	s	h
m	n	
	l	
w	y	

However, it has six **vowels**:

i	u
	o
e	ɔ
	a

Nasalisation of vowels is phonemic, and a two-tone system is present.

In its **morphology**, Pawaia shows quite considerable typological and structural agreements with the Teberan Family languages.

Nouns: No relational suffixes are present, and the agentive is not marked. No obligatorily possessed noun category is present.

Pronouns: Only three personal pronouns exist:

1 sg	ana
2 nd	ono
1 pl	nono

Of these, ana and nono belong to set I (see 2.3.3.2. in this volume), and ono to set III (see 2.3.3.4.). Demonstratives replace the third person pronoun.

Possession is indicated by special possessive pronouns. Only two are in evidence: a = *my, our*, ma = *your, his, their*.
Examples: a hã = *my dog*, ma wo = *your bag*.

Verbs: Final and medial verbs are distinguished, but the latter are rudimentary and are marked only by the omission of the indicative-declarative suffix -e which appears with final verbs. No distinction between subject identity or non-identity in two successive clauses is made, e.g. á nu-e = *he has gone = he* (*go*-indicative/declarative); á nu hetesũe = *he has gone to eat = he go*(medial form) (*will-eat*).

Verbs in Pawaian undergo morphophonemic changes manifesting themselves in consonant changes when suffixes are added to them. They are obligatorily marked for either of two aspects, perfect (-i-) or imperfect (-ai-), e.g. ono het-i-e = *you saw = you* (*see*-perfect-declarative), ono hen-ai-e = *you are seeing* (or: *you will see immediately*) = *you* (*see*-imperfect-declarative).

Four suffixes denote (subject-)person-number-stative in portmanteau fashion, i.e.

-o-	1st sg-perfect-stative
-ũ-	3rd sg-perfect-stative
-ulo-	1st sg-imperfect-stative
-esũ-	3rd sg-imperfect-stative

Example: ana het-ulo-e = *I am seeing = I* ([*see*]-[1st sg subject + imperfect + stative]-declarative).

The negative is marked by -ãi, and the interrogative by -a, both replacing the declarative suffix -e, e.g. a hen-u-a = *did he see? = he* ([*see*]-[3rd sg subject + perfect + stative]-[interrogative]).

The non-immediate future tense is marked by the suffix -u- after the stem, e.g. omol hen-u-ai-e = *they will look later = (those-men)* ([*look*]-[non-immediate future]-[imperfect]-[declarative]).

2.7.6. THE TURAMA-KIKORIAN SUB-PHYLUM-LEVEL STOCK

2.7.6.1. *INTRODUCTORY REMARKS*

After early indications by Capell (1962) regarding the existence of several interrelated languages in the area of the Middle and Upper Turama and of the Paibuna and Omati Rivers in the western part of the Gulf District, K. Franklin and C.L. Voorhoeve carried out further preliminary studies in them (Franklin 1968, also mentioned in Wurm 1971 - in the note before the late 1969 supplement) and came to the conclusion that these languages whose location they were able to delineate more definitely, constituted a family and were related to languages of what is today known as the Central and South New Guinea Stock of the Trans-New Guinea Phylum.

Subsequent studies carried out mainly by Franklin (1973b) showed the languages to be four in number, to extend further than previously assumed, and to constitute a stock consisting of a family and a family-level isolate. He named it the Turama-Kikorian Stock, with Kikorian Stock as an alternative.

From what is known of these languages, they seem to be somewhat aberrant when compared with other Trans-New Guinea Phylum languages, though apparently less so than those of the Teberan-Pawaian sub-phylum-level Super-Stock. They show some strong Trans-New Guinea Phylum features such as very predominantly set I (see 2.3.3.2. in this volume) pronouns, and possessive suffixes to nouns which are formally related to the pronouns. At the same time, the number of reflexes of Trans-New Guinea Phylum protoforms in them is comparatively low. In the light of this, it has been decided to give the Turama-Kikorian Stock preliminarily the status of a sub-phylum within the Trans-New Guinea Phylum - further information on its member languages may well make it possible to classify it as an ordinary stock in the phylum.

2.7.6.2. *GEOGRAPHICAL LOCATION OF THE FAMILIES OF THE TURAMA-KIKORIAN STOCK*

The Mena Family of the stock is located in the Middle and Upper Omati and the Upper Turama Rivers area in the extreme western corner of the Gulf District of Papua New Guinea. Omati is spoken along the Middle Omati River, with Ikobi on the Upper Omati, and Mena further west on the Upper Turama River.

The family-level isolate, Kairi, is spoken in villages generally north of the town of Kikori, along the Kikori, Sirebi and Iviri Rivers, with a geographically separate small group situated further north-west on Iehu Creek.

2.7.6.3. *COMPOSITION OF THE TURAMA-KIKORIAN STOCK*

The composition of the Turama-Kikorian Stock (2,100)[22] is as follows:

1) Turama-Omatian (or Mena) Family 1,450
   - Omati 800
   - Ikobi, Mena } 650

2) Kairi (or Dumu) family-level Isolate 650

2.7.6.4. *INTERRELATIONSHIPS WITHIN THE TURAMA-KIKORIAN STOCK*

Within the Turama-Omatian Family, the interrelationship between Ikobi and Mena is very close, and it may be possible that they constitute in fact only dialects of one language. It has been claimed that mutual intelligibility exists between them (Franklin 1973b). The lexical interrelationship between them and Omati is on the level of about 50% shared basic vocabulary cognates, but further study may show it to be closer.

The precentages of basic vocabulary cognates shared by Kairi with numbers of the Turama-Omatian Family are in the high teens, but here again it appears likely that their interrelationship is in fact closer.

2.7.6.5. *TYPOLOGICAL AND STRUCTURAL FEATURES OF THE LANGUAGES OF THE TURAMA-KIKORIAN STOCK*

Comparatively little is known of the structure of these languages. Some of their characteristics seem to be the presence of nasal vowels, and apparently, the same substratum as mentioned above in 2.7.2.2.6. is making itself felt in them. It appears that the characteristics of the languages are in keeping with those mentioned for the Trans-New Guinea Phylum languages in general in 2.3.2.5. and 2.5.2., if allowance is made for the presence of that substratum. The marking of the person and number of the subject with verbs through suffixes seems to be present with at least a number of forms. The verb stems undergo morphophonemic changes manifesting themselves in vowel changes when suffixes are added to them. The object is marked with at least some verbs, and a special set of verb forms denotes the negative. Some medial verb forms appear to be present, but the evidence is inconclusive as to whether forms denoting subject identity and non-identity of the subjects of the verbs in the two successive clauses are differentiated. Relational and possessive suffixes appear with nouns.

Some notes on Kairi may be added here (Franklin 1973b; A. Capell's field notes kindly put at the disposal of the author).

Phonology

Consonants:	p	t	k
	b	d	g
	m	n	
		r	
	f	s	h
	v		
	w	y	

Vowels:

i		u
		o
e		ɔ
	a	

Phonemic nasalisation is present.

Suprasegmentals: No reliable information is available but the materials suggest the presence of a two-tone system with low functional load.

Morphology

Nouns: Relational markers are suffixes, and an agentive, or subject marker, -po, is present. Possessive suffixes appear. However, no obligatorily possessed category of nouns is present.

Pronouns:

	1st	2nd	3rd
sg	ene	eke	ane
dl	nati	kati	ati
pl	name	kame	ame

The possessive suffixes which appear in conjunction with the proposed personal pronouns, appear to be optional. They are:

1st	-na(mo)
2nd	-ka(mo)
3rd	-a(mo)

Example: eke u-ka = *your* (sg) *coconut*, but ane neikomo = *his food*.

Possession can also be indicated by the personal pronouns placed after the noun indicating the possessed object, e.g. maka nati = *our* (dl) *father*.

Verbs: There are final and medial verbs, but it is not quite clear whether with the latter, a distinction is made between forms denoting identity or non-identity of the subjects of the verbs in the two successive clauses, though some indications point in that direction. The elaboration of the medial verb forms is of a very low order, and at least same subject medial forms consist of the verb stem only, e.g. nati ame-wahito waheti-ma-po a-po pini-te youka-uto = *we watched him, and we saw that he went into the bush = we* (*him-see*) ([*see*: in allomorphic form]-[1st pl subject marker]-[medial verb change of subject marker?]) (*he*-subject) (*bush-into*) ([direction?]-[*go*]).

With final verbs, the person and number of the subject are sometimes marked by portmanteau suffixes in conjunction with morphophonemic changes affecting the vowels of the verb stem. In the past tense these markers appear to be absent - they appear largely in forms denoting a stative

which would be comparable to the situation in Pawaian (see above 2.7.5.3.), e.g.

ene no ene ne-imo	*I am eating*
eke no-noa	*you* (sg) *are eating*
ane no-mo	*he is eating*
name no-mo	*we all are eating*
kame na-do	*you all are eating*
ame ne-mo	*they are eating*

The negative is formed by vowel changes, e.g. ene na-imo = *I am not eating*, and affixes seem to play a part.

There seem to be four tenses: past, distant past, present and future, and punctiliar and continuous aspects. Aspectual and modal elaboration appears to be of a low order.

2.7.6.6. *SUBSTRATUM INFLUENCE IN THE TURAMA-KIKORIAN STOCK LANGUAGES*

It has already been mentioned above in 2.7.6.5. that influence from the substratum referred to above in 2.7.2.2.6. is present in the Turama-Kikorian Stock languages.

2.7.7. THE INLAND GULF SUB-PHYLUM-LEVEL STOCK

2.7.7.1. *INTRODUCTORY REMARKS*

The Inland Gulf Stock constitutes a very recent addition to the Trans-New Guinea Phylum languages. Its existence was discovered by Franklin in 1969 (Wurm 1971: note before the late 1969 supplement) who split off some of its languages from the then tentatively established Turama-Kikorian Family, and combined them into a Turama and Bamu Rivers Family which constituted a phylum-level family isolate. It was later found that a geographically widely separated language, Ipiko, showed a stock-level relationship to this newly established family - this led to the establishment of a new stock which was named the Inland Gulf Stock (Franklin 1973b). It was regarded until quite recently as constituting a small Papuan phylum by itself, until a short while ago, Franklin (see 2.14.2. in this volume) established the fact that it was related to other stocks in the area which were members of the Trans-New Guinea Phylum. He noted that its relationship was more obvious with the Turama-Kikorian and the Central and South New Guinea Stocks than with others.

The pronouns of the Inland Gulf Stock languages belong very predominantly to set I (see 2.3.3.2.), the typical Trans-New Guinea Phylum set, only the three singular pronouns in Ipiko belong to sets B, III and II

(see 2.3.3.7., 2.3.3.4. and 2.3.3.3. in this volume) respectively. Their vocabulary contains a number of reflexes of Trans-New Guinea Phylum proto-forms including verbs (e.g. *say*). Little is known of their structure, but on the basis of the evidence mentioned above, it seems quite justifiable to include the Inland Gulf Stock, on the sub-phylum-level, into the Trans-New Guinea Phylum. Further information on the languages, especially on their structure, may make it possible to give it ordinary stock-status within the phylum.

2.7.7.2. *GEOGRAPHICAL LOCATION OF THE MEMBERS OF THE INLAND GULF STOCK*

The languages of the Minanibai Family within the stock are spoken in three geographically separated locations.

Minanibai is spoken on the Middle Paibuna River, immediately to the north of the Turama Delta, in the western part of the Gulf District of Papua New Guinea, and in a village (Pai'ia'a No.2) at the mouth of the Omati River further east.

Tao-Suamato is located on the Upper Bamu and the Middle and Lower Wawoi Rivers in the north-eastern corner of the Western District of Papua New Guinea.

Another language, Karami, now apparently extinct, was reported in 1917 to be spoken on the right-hand side of the left branch of the Upper Turama River in the western corner of the Gulf District. The somewhat unreliable wordlist given of the language in the report shows it to be a member of the Inland Gulf Stock - it may have been one of the Minanibai Family.

Ipiko, the family-level isolate within the Inland Gulf Stock, is spoken far to the east of the Minanibai Family, about five miles up the Pie River, north of Baimuru Government Station, in the central part of the Gulf District.

2.7.7.3. *COMPOSITION OF THE INLAND GULF STOCK*

The composition of the Inland Gulf Stock (800)[23] is as follows:

1)	Minanibai Family		600
	Minanibai } ?	300	
	Tao-Suamato } ?	300	
	Karami	extinct	
2)	Ipiko family-level Isolate		200

2.7.7.4. *INTERRELATIONSHIPS WITHIN THE INLAND GULF STOCK*

The relationship between the two surviving members of the Minanibai Family is very close, and it seems likely that they constitute only dialects of one language. The percentage figures of basic vocabulary

cognates shared between Karami and the Minanibai Family languages are very low (17% and 11%), but the Karami list is not reliable, and other old lists giving Minanibai and Tao-Suamato items yield percentage figures of only 40-45% cognates shared when compared with modern lists (Franklin 1973b). From this, it may be extrapolated that the real lexical relationship of Karami with the Minanibai Family languages may well be above the diagnostic limit for family membership.

The relationship between Ipiko and the two members of the Minanibai Family is on the low-to-medium stock-level, with percentages of shared cognates 20% and 14% respectively.

2.7.7.5. *TYPOLOGICAL AND STRUCTURAL FEATURES OF THE INLAND GULF STOCK LANGUAGES*

At present, little is known of the structure of the languages beyond some basic phonological information, the pronoun system and some very limited information on noun and verb morphology. The notes given below refer to Minanibai (Franklin 1973b).

Phonology

Consonants:

p ~ f	t	k	
mb	nd	ŋg	
			h
m	n		
	r		

Vowels:

i		u
		o
e		ɔ
	a	

No information is available on the suprasegmental system.

Morphology

Pronouns:

	1st	2nd	3rd
sg	no	ŋgo	eti
pl	ni	ndo	eti

A dual set seems to be present, but the forms given in Franklin 1973b are identical with the plural forms.

Other scanty information on morphology which can be culled from the materials suggest some structural similarity between the Inland Gulf Stock languages and those of the Turama-Kikorian Stock.

2.7.8. THE ELEMAN SUB-PHYLUM-LEVEL STOCK

2.7.8.1. *INTRODUCTORY REMARKS*

The Eleman Stock also constitutes a very recent addition to the Trans-New Guinea Phylum. The existence of a family of closely interrelated languages in coastal and hinterland areas of the eastern part of the Gulf District has been known since Ray (1907) established it - it was known as the Toaripi Family for a long time.

Detailed work in member languages of the family and in the family itself as a whole has in recent years been carried out by Brown (1968, 1972, 1973) who gave it the name Eleman Family.

The family was, until quite recently, regarded as constituting a small Papuan phylum by itself (Wurm 1971).

At the same time, the existence of the Namau or Koriki language, now called Purari, to the west of the Toaripi or Eleman Family area, was also known since the beginning of the century (Ray 1907). Until quite recently, it was regarded as a phylum-level Papuan isolate (Wurm 1971).

Similar statements apply to the Tate or Raepa-Tati language spoken near Kerema in the middle of the Eleman Family area (Franklin 1973b).

However, recent work by Brown (1973) and Franklin (see 2.14.2. and 2.15.3.) has demonstrated that both the Purari and the Tate languages are related to those of the Eleman Family on the stock level which makes it possible to include them all in a newly set-up Eleman Stock. At the same time, Franklin (in 2.14.2.) suggests that the Eleman Stock may be related to the East New Guinea Highlands Stock on the phylum level, which would make it a member of the Trans-New Guinea Phylum. There is corroborating non-linguistic evidence supporting the assumption of a relationship between the East New Guinea Highlands and the Eleman Stocks, and it seems that at least some groups among the Eleman people have migrated to their present area from the interior.

The personal pronouns in the Eleman Stock languages belong in part to sets I and III (see 2.3.3.2. and 2.3.3.4.), but some cannot be assigned to any of the recognised sets (see 2.3.3.8. in this volume). The languages contain a limited number of reflexes of Trans-New Guinea Phylum proto-forms, and some of their structural features are comparable with those of Trans-New Guinea Phylum languages in general (see 2.3.2.5. and 2.5.2. in this volume) though there are some differences. In the light of this, it seems possible to include the Eleman Stock languages into the Trans-New Guinea Phylum on a sub-phylic level.

2.7.8.2. *GEOGRAPHICAL LOCATION OF THE MEMBERS OF THE ELEMAN STOCK*

The Eleman Family of the stock extends along the coast and hinterland of the eastern half of the Gulf District of Papua New Guinea, from the Aivei River east of the Lower Purari River, eastwards to the border between the Gulf and Central Districts. Along the Lower Vailala River area in the west, and along the Lakekamu River in the east, two of its member languages (Orokolo and Toaripi) extend inland for quite some distance.

The Purari family-level isolate adjoins the Eleman Family in the west and occupies the Purari Delta area, extending east to the Pie River and north to the height of Baimuru Government Station.

The Tate language is spoken in three villages in the Cape Cupola area, south-east of Kerema.

2.7.8.3. *COMPOSITION OF THE ELEMAN STOCK*

The composition of the Eleman Stock (41,700)[24] is as follows:

1)	Eleman Family			34,900
	Toaripi dialects		20,200	
	Sepoe	1,100		
	Toaripi proper	14,400		
	Kaipi	4,700		
	Uaripi		2,500	
	Opao		1,200	
	Keuru (or Belepa) dialects		4,600	
	Keuru proper	3,900		
	Aheave	700		
	Orokolo		6,400	
2)	Purari (Koriki, Namau) family-level Isolate			6,500
3)	Tate family-level Isolate			270

2.7.8.4. *INTERRELATIONSHIPS WITHIN THE ELEMAN STOCK*

Within the Eleman Family, the degrees of interrelationship are close to very close, with the percentages of shared basic vocabulary cognates ranging upwards from the high forties and low fifties, and the majority of them lying in the sixties and seventies. The interrelationships on the structural level are also very close.

Brown (1973) suggests a subdivision into an Eastern and a Western Eleman linguistic group, the first comprising the Toaripi dialects and Uaripi, and the second Opao, the Keuru dialects, and Orokolo. While the cognation percentages lie persistently higher within the group boundaries than across them, percentages of up to 75% occur across the boundaries

between adjacent languages belonging to opposite groups - obviously the result of mutual borrowing.

The lexical relationship between Purari and the Eleman Family languages is low - the percentage figures of shared basic vocabulary cognates range from below 10% to the low teens. However, the structural relationship between them, both on the typological and formal level, is closer than on the lexical. With Tate, Purari shares 15% basic vocabulary cognates. Further study may show the cognation percentages to be in fact higher.

2.7.8.5. *TYPOLOGICAL AND STRUCTURAL FEATURES OF THE ELEMAN STOCK LANGUAGES*

2.7.8.5.1. General Remarks

As has been mentioned above in 2.7.8.1., some of the structural features of the Eleman Stock languages are comparable to those mentioned in 2.3.2.5. and 2.5.2. as characteristic of Trans-New Guinea Phylum languages in general. Amongst the chief features of the languages of the stocks, the prevalence of clitics and particles over affixes may be mentioned. Relational markers with nouns are few, and no possessive marking with them is present. The personal pronouns display an inclusive-exclusive distinction in the plural forms. The verb is characterised by a lack of indication of the person and number of the subject, and a low-level development of medial forms which do not show distinct forms to denote identity or non-identity of the subjects in successive clauses.

A few notes on Toaripi, of the Eleman Family, with some remarks on the Purari family-level Isolate, may be added (Brown 1973):

2.7.8.5.2. Toaripi

Phonology

Consonants:	p	t		
	f	s		h
	m	l		

m has a bilabial fricative allophone, and l an r allophone. In the practical orthography, these allophones are written as v and r.

Vowels:	i		u
			o
	e		ɔ
		a	

ɔ is rendered in the practical orthography by ō. Stress is predictable.

The syllable structure is very simple, and diphthongs abound.

Morphology

In the morphology, suffixes and clitics or particles play an important part. Several of the suffixes appearing in the morphology are demonstrably derived from words such as verb forms.

Nouns: Three relations are indicated by particles: possessive (-ve), instrumental (-sa), and object (-la), e.g. uamori ve tivi = *women's work*.

A few relationship terms take a plural suffix.

No obligatorily possessed nouns exist, and possessive affixes are not present in the language.

Pronouns: The personal pronouns show an inclusive-exclusive distinction, but only in the plural.

	1st		2nd	3rd
	incl	excl		
sg		ara(o)	a(o)	are(o)
dl		elaka	euka	ereuka
pl	ereita	ela(o)	e(o)	ere(o)

Possession is expressed by the preposed personal pronouns with the possessive particle -ve suffixed to them, e.g. arave = *my*. The object particle, as a suffix to pronouns, has the allomorphic form -ro, e.g. araro = *me* (direct and indirect object).

Verbs: Final and medial verb forms occur as well as relative verb forms which function as noun adjuncts.

With final verbs, no marking of the person or number of the subject is found, only tense and aspect is shown by suffixes and auxiliaries.

Five tenses are distinguished: indefinite, remote past, recent past, immediate future and indefinite future, e.g. with mapai = *hear* the five tense forms are map-ai, mapo-pe, mapa-ita, mapai roi, mapai vei la roi.

In the indefinite tense, and some other verb forms, the suffixes have allomorphic forms establishing several conjugations. A special set of stative verbs exist with which a singular-plural distinction is marked.

The aspects include present continuous, recent and remote past frequentative, and habitual. For instance, with mapai = *hear*, the four forms are: mapai-peta, mapai-ape, mapa-vota, mapai-vei.

The negative is marked by auxiliaries, e.g. for the present and past, kao is placed after the indefinite tense form, e.g. mapai kao = *do (did) not hear*.

The interrogative is denoted by the clitic ei.

An ordinary and an emphatic imperative exist and are marked by suffixes, e.g. mapai-a =/ *listen!*

Medial verb forms show no distinction for identity or non-identity of the subjects of the verbs in the two successive clauses. They are not marked for tense, aspect or mood, and are formed by not entirely predictable changes from the indefinite tense form, e.g. **mapai** = *hear* has the medial form **mapi**. Stative verbs have no separate medial forms. Example: **ere isai elavo voa pataipe** = *they went (coastwards) and climbed into the men's house = they (coastwards-go) (men's house) into climbed.*

Simultaneity of the actions referred to in the two successive clauses is indicated by the particle **vo** after the medial verb: **are soea vo kotipe** = *he running came.*

Other medial verb forms denoting purpose are formed by the placing of the particle **vei** after the indefinite tense form, e.g. **ere oru mere vipai vei kavōpe** = *they banana suckers plant-to (went inland).*

2.7.8.5.3. Purari

The Purari language shows very considerable typological agreement with the Eleman Family languages and formal identity between several markers in Purari and their equivalents in Eleman Family languages is present. Its pronouns belong predominantly to sets I and III (see 2.3.3.2. and 2.3.3.4.), and thus can be assigned to recognised sets. No inclusive-exclusive distinction is present in the plural forms.

The general verbal system and structure in Purari is closely comparable to that found in Eleman Family languages (see the discussion of the Toaripi verb above in 2.7.8.5.2.), and some forms are identical, e.g. the indefinite tense, e.g. Purari **ru-ai** = *stab*: Toaripi **suk-ai**.

2.7.8.6. *SUBSTRATUM INFLUENCE IN ELEMAN STOCK LANGUAGES*

It seems that the substratum referred to above in 2.7.2.2.6. has exercised some moderate influence upon the Eleman Stock languages, but some of its chief characteristics, such as nasal vowels, are absent from these languages.

2.7.9. THE OKSAPMIN SUB-PHYLUM-LEVEL ISOLATE

The Oksapmin language, spoken by approximately 5,000 people to the west of the uppermost course of the Strickland River, and immediately north of the border between the Western and West Sepik Districts of Papua New Guinea, is a doubtful member of the Trans-New Guinea Phylum. The problems associated with its classification have been discussed in 2.2.6.9. in this volume and need not be taken up here again. In view of what has been said there, the classification of Oksapmin as a sub-phylum-level isolate within the Trans-New Guinea Phylum may be appropriate, until further studies may call for a revision of this classification.

N O T E S

1. The figures indicating numbers of speakers are approximate and based on 1972 census figures.

2. Languages showing rarely below 45% and mostly above 55%, but below 70% shared basic vocabulary cognates (see 2.2.5.) are classified as belonging to the same sub-family.

3. It may perhaps prove possible to include Binumarien into the Tairora dialects.

4. The Kamano dialects consist of several incomplete mutual intelligibility chains: **Kamano** - Kanite - (Keiagana), Kamano - **Kanite** - Keiagana - (Yate), (Kamano) - Kanite - **Keiagana** - Yate - (Yagaria), (Kanite) - Keiagana - **Yate** - Yagaria, (Keiagana) - Yate - **Yagaria**.

5. Gimi could perhaps be classified as a sub-family-level isolate. It appears to be somewhat closer to the Kamano sub-family in structure than to Fore, though lexically it shows much closer links with the latter (46% as opposed to 35%). At the same time, Kenati seems to be lexically almost equally closely related to Fore and Gimi which may suggest that Fore and Gimi have closer links with each other than with any other language.

6. Nagane is spoken in addition to Chimbu proper, by a part of the adult male population of two of the four clans constituting the Inaugl tribe in the Upper Chimbu Valley. It is now being superseded by Chimbu proper.

7. Considerable confusion has been reigning over the names of these communalects. When assessing the results of his 1958-59 fieldwork, the present writer distinguished two languages which he called Narak (around Tabibuga Patrol Post) and Gandja (Kandawo) (in the Jimi Headwaters area

around Yawaramon and Monggum) (Wurm 1961a, 1971). He found that their basic vocabulary cognation percentage was only 61%. Bunn and Scott (1962) used the name Narak for a group of Wahgi speakers living north of the Jimi Divide in the Jimi Sub-Family area and combined the present writer's Narak and Gandja into a single language which they called Gandja. At the same time, they said that 'this group is divided into two distinct dialects; one situated around the Patrol Post Tabibuga (i.e. the present writer's Narak) and the other in the Jimi Headwaters area around Yawaramon and Monggum (i.e. the present writer's Gandja). Mutual understanding between these two dialects is very limited due to the fact that they almost border on being two separate language groups'. As from 1966, the name "Gandja" was replaced in Summer Institute of Linguistics usage by "Narak" without a change of meaning. Cook's (1966) classification occupies an intermediate position between Bunn and Scott's, and the present writer's, classifications. An assessment by the present writer of his own materials in the light of recent comparative findings has shown that his original cognation percentage figure of 61% was much too low, and is close to 70%. In view of this it seems justifiable to regard Narak and Gandja as highly aberrant dialects of a single language for which the name Narak appears to be the best choice.

8. The exact determination of the number and nature of the Enga dialects still awaits further study. The dialects listed here have been tentatively set up on the basis of preliminary brief observations.

9. A number of the indigenes living in the Wapi Census Division are bilingual speakers of Enga and Pinai of the Piawi stock-level Family in the Yuat Super-Stock in the Ramu Sub-Phylum of the Sepik-Ramu Phylum (see 2.11.3.5.1. in this volume). (1977 Note: P. Brennan regards Pinai and Wapi as separate languages - see Note at the end of 2.15.1.)

10. Nete, in the headwaters of the Karawari River in the East Sepik District, is closely related to Enga, but is a distinct language. It seems to link most closely with the Maramuni dialect (R. Lang, personal communication).

11. Lemben, on the Karawari River and towards the Middle Yuat area in the East Sepik District, is known to the present writer only from a vocabulary (also, Patrol Report 1962). It has clear affinities with Enga, but the list shows only 43% cognation between Lemben and Enga which would put Lemben into a separate sub-family. At the same time, it may well be that either the vocabulary list is not very reliable, or that the language has borrowed heavily from outside (some of the items show connections with

Sepik Hill Family languages (Sepik Sub-Phylum, Sepik-Ramu Phylum, see 2.11.2. in this volume)) and that Lemben (Iniai) is basically a northern Enga dialect or a language closely related to Enga. Laycock (1973) reports Bisorio as spoken in four villages, one of them Iniai, in the area. He mentions that it shows close relationship with Nete to the south-west and suggests that Bisorio may be the same as Lemben. (1977 Note: P. Brennan (personal communication) identifies 'Lembena' as a separate language.)

12. The Wiru Family could perhaps be included into the West-Central Family as a sub-family-level isolate - see 2.7.2.2.4.

13. See 2.7.2.2.4.

14. The numbers of speakers are approximate and based on 1971 Census figures.

15. The numbers of speakers are approximate and based on 1971 Census figures.

16. Baruya and Simbari may perhaps prove to be aberrant dialects of one language.

17. Includes the Wojokeso dialect.

18. Ivori and Lohiki could perhaps be regarded as dialects of one language.

19. Menya and Kapau may perhaps constitute aberrant dialects of one language.

20. The figures are approximate and based on 1972 Census figures.

21. The difference between the two stop series seems to constitute a voiced ∿ voiceless unaspirated lenis versus a voiceless aspirated fortis contrast.

22. The figures are approximate and based on 1972 Census figures.

23. The figures are very approximate and based on 1972 Census figures.

24. The figures are approximate and based on 1970 Census figures.

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2.8. THE NORTH-EASTERN AREAS OF THE TRANS-NEW GUINEA PHYLUM

2.8.1. NORTH-EASTERN TRANS-NEW GUINEA PHYLUM LANGUAGES

K.A. McElhanon

2.8.1.1. INTRODUCTION

The Eastern Section of the North-Eastern Trans-New Guinea Phylum languages is regarded as comprising the Papuan languages of the eastern Finisterre range, the Huon Peninsula, and Umboi Island.[1]

Apart from early comparative vocabularies (Zöller 1890, 1891; Schmidt 1900-1902; Ray 1902; Dempwolff 1905) and a grammatical study of the Kâte (Kai) language (Grube 1895), little was known about these languages until the mid-1920's when Pilhofer (1928, 1929) published extensive word and paradigmatic lists for ten dialects and languages related to the Wemo dialect of Kâte. In 1925 Keysser published a dictionary of Kâte, and Pilhofer (1927a, 1927b) published a grammatical sketch and some conversations in the Kâte language. Pilhofer's extensive grammar appeared in 1933. Probably as a result of the Lutheran Mission's decision to promote Kâte as the lingua franca, the other Papuan languages were neglected except for Ono (Wacke 1931). No further studies of the Huon Peninsula languages appeared until 1967 when the present writer began his studies of these languages (McElhanon 1967a, 1967b, 1970a, 1970b, 1970c, 1970d, 1970e, 1972, 1973, 1974; McElhanon and McElhanon 1970). The author published on Komba (McElhanon 1969), and Fabian, Fabian and Peck (1971) on Nabak.

The languages of the Finisterre range were not studied until the 1960's when Davis began studying the Wantoat language (Davis 1961,

McElhanon, K. "North Eastern Trans-New Guinea Phylum Languages". In Wurm, S.A. editor, *New Guinea area languages and language study, Vol. 1, Papuan languages and the New Guinea linguistic scene.* **C-38:527-568**. Pacific Linguistics, The Australian National University, 1975. DOI:*10.15144/PL-C38.527*

1964a, 1964b, 1969, 1972, 1973). Subsequently, study was commenced in Urii (Webb) and Rawa (Claassen), but the only publication resulting from these studies has been Webb 1974. Comparative studies have progressed no further than a lexicostatistical classification (Claassen and McElhanon 1970) and some grammatical comparisons (McElhanon 1973).

2.8.1.2. CLASSIFICATION

The problems encountered in attempting a lexicostatistical classification of the languages of this eastern section have been discussed elsewhere (McElhanon 1970f). Further implications for the use of lexicostatistics in classifying groups of Papuan languages in general are discussed in McElhanon 1971 and elsewhere in this volume (2.2.3.). Suffice it to say that, in the writer's opinion, lexicostatistics as presently applied to Papua New Guinea basic vocabularies does not yield anything more than very preliminary classifications. Until extensive historical reconstruction is completed, beginning with the individual languages and families, one is well advised to be cautious in accepting more definitive statements about the interrelationships of the Papuan languages.

That there is a large genetic group of Papuan languages has been demonstrated (McElhanon and Voorhoeve 1970; Wurm 1976). The composition of this group and its subgroups, however, is a question which will be debated for years to come. Since McElhanon and Voorhoeve's study was published, the Trans-New Guinea Phylum has been expanded as other groups have been posited as its members. Because of the large number of groups now posited for this phylum, it has become useful to apply taxonomic labels to these subgroups. Therefore, as a matter of convenience only, the Finisterre-Huon group will be referred to as a 'stock' and the immediate subgroups as 'families'. Below the level of 'family', only the terms 'language' and 'dialect' will be used.

The use of these terms does not imply that the present writer regards such groups as having been established. Rather, he takes the view that the phylum has been posited and that the phylum will be confirmed and its subgroupings established only after a rigorous application of the comparative method. The following lexicostatistical classification must be regarded as tentative and preliminary because it is based upon the recognition of cognates by the 'inspection method' (Gudschinsky 1956). The lexicostatistical percentages for the Finisterre and the Huon Peninsula languages respectively are found in Claassen and McElhanon 1970 and McElhanon 1970f.

2.8.1.3. FAMILIES WITHIN THE FINISTERRE-HUON STOCK

Because of the presence of dialect and language chains, the borders of the posited family groupings are not always distinct and therefore the membership is not always discrete. This is especially the case for the Huon Peninsula families. In the following sections the posited families are presented as they are located from east to west. Language names are in bold face capitals and dialect names in bold face type. Village names, which are taken from the 1968 Village Directory are listed according to census divisions. The abbreviations in parentheses are keyed to the map.

2.8.1.3.1. *KOVAI LANGUAGE (FAMILY-LEVEL ISOLATE) (KV)*, pop. 3,150.

The **KOVAI** language is distantly related to the languages of the Huon Peninsula as evidenced in the pronominal system and the verb morphology. Due to apparent influence by the surrounding Austronesian languages, however, only a few probable cognates have been identified. Siassi Census Division: Aiyau, Arot, Aupwel, Barang, Bukum, Gasam, Gom, Mararamu, Obongai, Omon, Opai, Oropot, and Tarawe.

2.8.1.3.2. *EASTERN HUON FAMILY (EH)*, pop. 23,250.

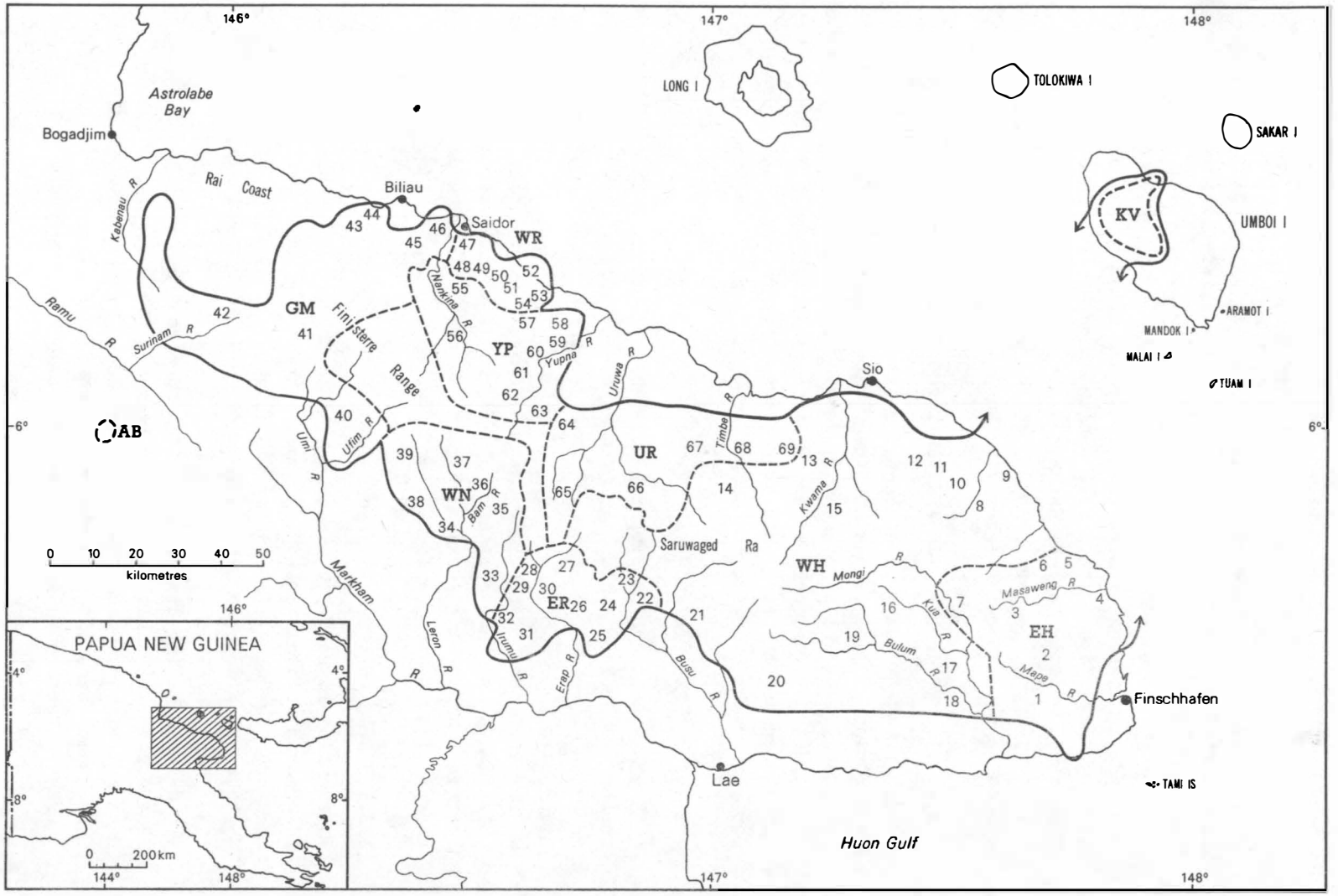
The Eastern Huon Family of languages is located in the south-east corner of the Huon Peninsula. The languages spread from the eastern Mongi basin to the east coast. They stretch as far north as the Tewai River.

The positions of two languages which are provisionally included in this family are indeterminate. These two languages, **DEDUA** and **KUBE**, represent mixed languages which share typological features with languages of both Huon Peninsula families.

2.8.1.3.2.1. Kâte (EH-1), pop. 6,130.

The Kâte language, which is spoken in the Kotte Census Division of the Finschhafen hinterland, is one of the better recorded languages of Papua New Guinea (see Grube 1895; Dempwolff 1920; Flierl and Strauss 1976; Keysser 1925; McElhanon 1974; Pilhofer 1927a, 1927b and 1933; Johnson 1972; see also (III) 7.4.5.2.).

In the days immediately preceding European contact, the Kâte people recognized five dialects of their language (Pilhofer 1928, 1929). The Lutheran Mission New Guinea, however, chose to promote a single dialect, **Wemo (Wena)**, in its church and school programmes. As a result, there are few speakers of the other dialects living today. For these



THE FINISTERRE-HUON STOCK

(Key to Map)

FINISTERRE-HUON STOCK

KV Kovai Language (family-level isolate)

EH Eastern Huon Family

1. Kâte
2. Mape
3. Dedua
4. Sene
5. Momare
6. Migabac
7. Kube

WH Western Huon Family

8. Ono
9. Sialum
10. Nomu
11. Kinalakna
12. Kumukio
13. Selepet
14. Timbe
15. Komba
16. Tobo
17. Yaknge
18. Kosorong
19. Burum
20. Momolili
21. Nabak

ER Erap Family

22. Nuk
23. Nek
24. Nakama
25. Munkip
26. Numangang
27. Sauk
28. Gusan
29. Finungwa
30. Nimi
31. Urii
32. Mamaa

WN Wantoat Family

33. Irumu
34. Saseng
35. Yagawak
36. Bam
37. Wantoat
38. Leron
39. Awara

GM Gusap-Mot Family

40. Ufim
41. Nahu
42. Rawa
43. Nekgini
44. Neko
45. Ngaing
46. Gira

WR Warup Family

47. Dahating
48. Bulgebi
49. Guiarak
50. Morafa
51. Forak
52. Degenan
53. Yagomi
54. Asat

YP Yupna Family

55. Mebu
56. Nankina
57. Gabutamon
58. Domung
59. Bonkiman
60. Wandabong
61. Nokopo
62. Kewieng
63. Isan

UR Uruwa Family

64. Som
65. Sakam
66. Yau
67. Komutu
68. Kawangi
69. Weleki

Abaga Language (family-level isolate)

other dialects, the following lists of village names represent the areas in which the other dialects used to be spoken. Villages representing more than one dialect are listed accordingly. The five dialects were:

(1) **Wemo**, spoken in Balangko, Fior, Jivevaneng, Katika, Kamaua, Leko, Mararuo (1/2), Masangko, Moreng (1/2), Sisi, and Tareko.

(2) **Wana**, spoken in Gurunkor, Kiwisawa, Moreng (1/2) and Tirimara.

(3) **Wamorâ**, spoken in Aimolau, Badzuluo, Bolingbongen, Gwinlankor, Kaungko, Kwenliki, Merikeo, Manduo (1/2), Uluor, and Zafilio.

(4) **Parec**, spoken in Mararuo (1/2), Manduo (1/2), Sililio, and Sosoninko.

(5) **Mâgobineng (Bamotâ)**, spoken in Bonga.

Of these five dialects, **Parec** is extinct, **Mâgobineng** is limited to one speaker, and **Wana** and **Wamorâ** have less than twenty speakers each. **Wemo** is also now spoken in all of the above villages plus Bonga (formerly **Mâgobineng**) and Lakona (formerly **SENE**).

2.8.1.3.2.2. **Mape (EH-2)**, pop. 4,860.

The **MAPE** language is spoken with considerable dialect variation in the following villages of the Kotte Census Division: Beding, Bokasu, Embengwasing, Fondengko, Gunazaking, Hapahondong, Kangarua, Lanitzera, Magazain, Mawaning, Moikisung, Safifi, Samantiki, Sambiang, Yombong, and Zingko. It is also spoken in the Yabim Census Division: Gauinlabu, Mange and Sokaneng, and in the Hube Census Division: Bongganko. The dialect known as **Naga** (Pilhofer 1928) is now extinct. The writer has distinguished **Eastern** and **Western** Mape dialects. Informants indicate that there are dialects named **Nigâc** and **Fuckac**, but various Mape leaders from the coastal villages have not agreed as to the extent of these dialects. More field work is required.

2.8.1.3.2.3. **Dedua (EH-3)**, pop. 4,730.

The **DEDUA** language has two major dialects. The Southern dialect is more closely related to **KÂTE** and the **Northern** dialect to **ONO**. Moreover, a couple of villages at the watershed of the coastal range show closer relationship to the **Yoangen** dialect of the **KUBE** language. As is the case with **MAPE**, the younger **DEDUA** speakers freely mix **KÂTE** vocabulary in their speech. Dedua Census Division: Faseu, Gunabosing,

Hobo, Hompua, Kingfarinau, Lebafu, Masa, Morago, Orarako, Siwea, Yamanzako, Yunzain, Zagahemi, Zongafifi, Zorogo, and Zunzumau.

2.8.1.3.2.4. **Sene (EH-4)**, pop. less than ten.

Kotte Census Division: Lakona.

2.8.1.3.2.5. **Momare (EH-5)**, pop. 370.

Dedua Census Division: Wandokai and Hubegong.

2.8.1.3.2.6. **Migabac (EH-6)**, pop. 1,030.

Dedua Census Division: **Northern dialect** in Hudewa and Walingai; **Southern** dialect in Ago, Butenka, and Kapauwa.

2.8.1.3.2.7. **Kube (EH-7)**, pop. 5,800.

Hube Census Division: **Kurungtufu** dialect (vicinity of Pindiu aerodrome) in Bantamu, Berakwaiyu, Besibong, Bulu, Bwakugu, Gamaheng, Gubu, Kwekwendangu, Kwenzenzeng, Magedzetzu, Pafiu, Sananga, Sanseng, Tiren, Ungsesu, and Zenguru; **Yoangen** dialect (east of Pindiu) in Afong, Gaieng, Homoneng, Kobea, Korbau and Silimana.

2.8.1.3.3. *WESTERN HUON FAMILY (WH)*, pop. 59,220.

The fourteen languages of this family spread westward from the Tewai and Mongi rivers to about 147°E longitude near the port of Lae.

2.8.1.3.3.1. **Ono (WH-8)**, pop. 3,000.
Wacke 1931.

There are two dialects of **ONO**, the **Amugen** and **Ziwe**. Kalasa Census Division: **Amugen** dialect in Bakon, Biungen, Kaunkeo, Keburum, Kip, Kukuya, Nuzen, Soweng, and Wetna; **Ziwe** dialect in Ga, Gerup, Kanomi, Kanzarua, Karako, Meiawa, Nanda, Ririko, Rua, Sambe, Samep, Tunge, Zakubep, and Zankoa. The dialect border near the villages of Bakon, Soweng, Rua, and Tunge is indistinct. Ono is the prestige language of the Kalasa area and is understood and spoken by most of the Nomu and Sialum men.

2.8.1.3.3.2. **Sialum (WH-9)**, pop. 640.

Kalasa Census Division: Nama, Sialum, and Kwambu.

2.8.1.3.3.3. **Nomu (WH-10)**, pop. 810.

In 1968 informants indicated to the present writer that the Nomu language became extinct about 1900. Data collected at that time revealed ONO roots with NOMU affixation. More recent comments, however, indicate that there may yet be some Nomu speakers alive. Kalasa Census Division: Bwambi, Ezanko, Gitukia, Paukwanga, and Sikikia.

2.8.1.3.3.4. **Kinalakna (WH-11)**, pop. 220.

Kalasa Census Division: Kinalakna.

2.8.1.3.3.5. **Kumukio (WH-12)**, pop. 550.

Kalasa Census Division: Kumukio (Gumukio).

2.8.1.3.3.6. **Selepet (WH-13)**, pop. 6,350.
McElhanon 1967a, 1967b, 1968, 1970a, 1970b, 1970c, 1970d, 1970e, 1972, 1973; McElhanon and McElhanon 1970.

Kalalo and Selepet Census Divisions: **Southern** dialect in: Belombibi, Honpato, Indum, Karangan, Kulavi, Selepet, and Wekae; **Northern** dialect in Domut, Hongo, Kabwum, Konimdo, Pendeng, Satop, and Sorong. Three other villages, Kondolop, Nimbako, and Wap, form a subdialect of the **Northern** dialect.

2.8.1.3.3.7. **Timbe (WH-14)**, pop. 11,510.

Data from the Timbe dialects are limited so that no definitive statements can be made regarding the dialect borders. There appear to be four dialects, but further study may show that the **Central** and **Western** dialects may be combined into one. Timbe Census Division: **Southern** (Upper) dialect in Honziuknan, Laumgei, Mumunggan, Ongganke, Pinang, and Sambangan; **Eastern** dialect in Boroke, Busian, Derim, Golangke, Tumung, Yandu, and probably other neighbouring villages; **Central** dialect in Lewamon, Dalugilomon, and neighbouring villages; **Western** dialect in Etaitno, Imon, Koiyan, and Nandong.

The village of Yakop (formerly Henggune) has been reported by M. Foster (Summer Institute of Linguistics) to be populated by people from a number of dialect areas. The dialectal status of the following villages is still undetermined: Bolimang, Bumbu, Dawot, Gomandat, Gombwato, Hem, Hemang, Kurung, Longmon, Pobung, Songgin, Takop, Timowong, Towat, Wavit, and Yunggu.

2.8.1.3.3.8. **Komba (WH-15)**, pop. 12,350.

Kalalo, Kalasa, Komba, and Selepet Census Divisions: **Eastern** dialect in Kumbip, Lebangando, Mangam, Melandum, Mula, Puleng, Satkwanga (Satwag), Sambori, and Tauknawe; **Central** dialect in Gatseng, Geraun, Indagen, Komban, Kopa, Langa, Musep, Saune, Wanam, and Waran, with a subdialect comprising Konge, Lama, Sikam, Umun, and Ununu; **Western** dialect in Bamurofto, Gumun, Ilaka, Sanon, and Sape; **Border** dialect in Dengando, Erendengan, Gilang, Tipsit, and Upat.

The **Eastern** dialect has double (labio-velar) stop phones [gb, kp] corresponding to the labialized stop phones [gw, kw] of the other dialects. The **Border** dialect is characterized by the phoneme â having a phonetic norm of [ɔ] rather than the [ʌ] of the other dialects. The villages of the **Western** and **Border** dialects lie along a major trade route (see Harding 1967), and their differences from the **Central** dialect may be accentuated by contact with the Selepet people.

2.8.1.3.3.9. **Tobo (WH-16)**, pop. 2,870.

Hube Census Division (Kua Valley): Avenggu, Korumba, Lalang, Lengbati, Nengit, Podzorong, Siu, and Yapang.

2.8.1.3.3.10. **Yaknge (Mindik) (WH-17)**, pop. 2,080.

Hube Census Division (vicinity of the Mindik aerodrome): Hendeneng, Mindik, Satneng, Suevitne, and Tumnang.

2.8.1.3.3.11. **Kosorong (WH-18)**, pop. 1,460.

Hube Census Division (south of Mindik aerodrome): Ebabang, Hamaronong, Wamuki, and Zalimpa.

2.8.1.3.3.12. **Burum (WH-19)**, pop. 4, 190.

The Burum language is spoken in the Hube Census Division (Burum Valley): Aregenang, Bulamarong, Dubi, Koili, Kor, Kotkin, Maran, Nomanene, Numbut, Sanaronong, Selimbeng, Semgeta, Simbeng, Ubaneng, Zanggung, Zengaren, and Zewitzan.

2.8.1.3.3.13. **Momolili (Mesem) (WH-20)**, pop. 1,700.

Naba and Momolili Census Divisions: Bilimang, Busung, Kaisia, Kwamu, Melanpipi, Momalili, Numenga, Samanzing, and Zezaging.

2.8.1.3.3.14 **Nabak (WH-21)**, pop. 12,000.
Fabian, Fabian, and Peck 1971.

Naba Census Division: **Western** dialect in Baindoung, Bambok, Bangdap, Dokaling, Hanobman, Karangadoan, Kiakum, Kwambaleng, Misalambaman, Mogom, Sakalan, Silimbang, Tewep, and Tukwambet; **Eastern** dialect in Akandang, Ankamap, Awen, Kasanombe, Kisituen, Kwapsanek, Momsalom, Sambue, Seperagamam (Seperagambang), Yalumbang, and Zitari. Each of these dialects has subdialects from the north to the south.

2.8.1.3.4. *ERAP FAMILY (ER)*, pop. 12,920.

This family stretches across the headwaters of the Busip and Erap Rivers and along the lower reaches of the Irumu River. The languages form a chain and share 21-72% of the basic vocabulary list. The four languages around Boana patrol post - Nuk, Nek, Nakama, and Numanggang - form a subgroup of more closely related languages.

2.8.1.3.4.1. **Nuk (ER-22)**, pop. 1,880.

Wain Census Division (east of Boana patrol post): Bawan, Geremen, Gevak, Gumbun, Karau, Misok, Monakaset, and Orin. There are two dialects, **Northern** and **Southern**, determined on the basis of lexicostatistics.

2.8.1.3.4.3. **Nek (ER-23)**, pop. 1,440.

Wain Census Division: **Eastern** dialect in Bandong, Bosagen, and Wampangan; **Western** dialect in Ganzengan, Guombot, and Kawaren. The former has dz corresponding to s in the latter. The people of Guombot and Wampangan are largely bilingual with **NUK**.

2.8.1.3.4.3. **Nakama (ER-24)**, pop. 1,020.

Wain Census Division: **Southern** dialect in Dzensan, Pupuf, and Wasin; **Northern** dialect in Kwaipunum, Sikeren, and Sokam. The h of the Southern dialect corresponds to the s of the Northern dialect.

2.8.1.3.4.4. **Munkip (ER-25)**, pop. 150.

Erap Census Division: Munkip. Its apparent close relationship with the Numanggang and Nakama languages north of it may be due to contact since Munkip village is located on the main trail leading from the Markham Valley (and the port of Lae) into the hinterland.

2.8.1.3.4.5. Numangang (ER-26)

Erap and Wain Census Divisions: **Eastern** dialect in Badibo, Baguman, Gain, Kasin, Sadau, and Serabo; **Western** dialect in Kawalang, Kwarebo, Soana, and Sugu. The **Eastern** dialect has h which corresponds to the s of the **Western** dialect.

2.8.1.3.4.6. Sauk (ER-27), pop. 630.

Erap Census Division: Sauk and Kisengam.

2.8.1.3.4.7. Gusan (ER-28), pop. 900.

Erap Census Division: Boiran, Borin, Gom, Gusan, and probably Nandalamen.

2.8.1.3.4.8. Finungwa (ER-29), pop. 470.

Erap Census Division: Finungwa and Gofan.

2.8.1.3.4.9. Nimi (ER-30), pop. 1,580.

Erap Census Division: Doandak, Kapora, Labisap, Lowai, Namen, Nimera, and Yangaran.

2.8.1.3.4.10. Urii (ER-31), pop. 2,400+.
Webb 1974.

Erap and Lei-Wompa Census Divisions: **Eastern** dialect in Fi, Tinibi, and Torowa; **Western** dialect in Aroande, Aropak, Bibera, Bunki, Fayang, Fi, Narumonke, Siara, Sintogoro, Sonkubing, Tinibi, and Torowa.

2.8.1.3.4.11. Mamaa (ER-32), pop. 210.

Lei-Wompa Census Division: Mamaa. The people of **MAMAA** are being assimilated by the people of the **FINUNGWA** language to the east. As a result, the status of this language is not clear.

2.8.1.3.5. *WANTOAT FAMILY (WN)*, pop. 10,120.

This family of languages stretches from the Leron Valley in the west along the southern slopes of the Finisterre Range to the Irumu Valley in the east. The family is dominated by the Wantoat language which represents more than half of the total number of speakers of languages belonging to it.

2.8.1.3.5.1. Irumu (WN-33), pop. 1,480.

Irumu and Lei-Wompa Census Divisions: Aret, Dagaman, Daku, Dopam, Durak, Garamboin, Gumia, Kawan, Uyangen, and Zueibak.

2.8.1.3.5.2. Saseng (WN-34), pop. undetermined.

Saseng Village, which the writer has not identified in census reports, is located on the west bank of the lower Leron River.

2.8.1.3.5.3. Yagawak (WN-35), pop. 560.

Wantoat Census Division: Walikuya, Sasang, and Kaman.

2.8.1.3.5.4. Bam (WN-36), pop. 1,080.

Wantoat Census Division: Bungan, Donan, Ewok, and Kandumin. This language is part of a chain of languages linking the Wantoat and Irumu families.

2.8.1.3.5.5. Wantoat (Wn-37), pop. 5,050.
Davis 1961, 1964a, 1964b, 1969, 1972, 1973.

Wantoat Census Division: Arawik, Atawagap, Bumbum, Buran, Dawansit, Dorem, Etaut, Gapmarapa, Gapmorbi, Gawan, Gesaut, Ginonga, Gwanganan, Gwaiing, Gwambongwak, Gwanbon, Gwapsit, Kesan Kikiapa, Kubung, Kupandu, Mamambam, Matap, Mupiapon, Sangurak, Seengaban, Taput, Tukwadaka, Umbi-Abon, Uyam, Wantoat, Yapaingan, Yiwondaga, and Yotdamuk.

D. Davis (Summer Institute of Linguistics) considers the Wantoat language to have widely divergent dialects and includes the Awara and Leron languages within his expanded Wantoat language. Because the lexicostatistical relationships between these groups range from 60-70%, these groups are tentatively classed as separate languages in this study.

2.8.1.3.5.6. Leron (WN-38), pop. 310.

Wantoat Census Division: Asindan, Gusiparan, and Munbantagan. Davis considers it to be a dialect of Wantoat.

2.8.1.3.5.7. Awara (WN-39), pop. 1,640.

Awara Census Division: Bakodupi, Dabaram, Gainan, Gaitapa, Guninggwan, Hikwok, Kanaiik, Matak, Mateiya, Sawin, Suat, Tangwenta, Yanuli, and Yudan.

2.8.1.3.6. *GUSAP-MOT FAMILY (GM)*, pop. 14,420.

This is the westernmost family of the Finisterre-Huon Stock. Except for the Ufim language in the Morobe District, all members are within the Madang District.[2]

2.8.1.3.6.1. **Ufim (GM-40)**, pop. 520.

Markham Headwaters Census Division: Kapara, Lankuam, Numbugu, and Samura.

2.8.1.3.6.2. **Nahu (GM-41)**, pop. 5,770.

Mot, Naho-Rawa, and Yaganon Census Divisions: Bakokono, Bilong, Budemu, Funyende, Guhungor, Kiambaui, Kumbarami, Kumburunku, Kwongo, Lusuang, Matoko, Mauwere, Mungo-Naho, Moro, Muniana, Sarakiri, Sari, Sewe, Sunakai, Wali, Wamunti, Yambara, Yorki, and Yorkia.

2.8.1.3.6.3. **Rawa (GM-42)**, pop. 6,000.

Kabenau, Mot, Naho-Rawa, and Yaganon Census Divisions: **Northern** dialect in Baubo, Bototo, Dogingo, Guhu, Karakara, Koki, Kubigam, Meibu, Mobap, Ongo, Sakorila, Simididi, Sinange, Sitaba, Wado and Yungendam; **Southern** dialect in Bangri, Beringei, Boro, Damanti, Goilo, Gomumu, Gonogeia, Gur, Guria, Gurumbu (part), Kikipei, Mororo, Mungo-Rawa, Parimo, Saranga, Senei, Seringo, Tauta, and Wangeto. In addition, six other villages are regarded as constituting a linking dialect between the Nahu and Rawa languages: Bagonda, Basor, Guti, Koiaku, Kurei, and Ramba.

2.8.1.3.6.4. **Nekgini (GM-43)**, pop. 430.

Mot Census Division: Asang, Reite, Seriang, and Sorang located west of the Mot River. Further study may show that **NEKGINI** and **NEKO** are dialects of a single language. Reports from **NGAING**, **NEKO**, and **NEKGINI** informants indicate the presence of a dialect chain linking the three languages.

2.8.1.3.6.5. **Neko (GM-44)**, pop. 320.

Mot Census Division: Damoin, Warai, and Yori located near the Lutheran mission station at Biliau.

2.8.1.3.6.6. **Ngaing (GM-45)**, pop. 1,100.

Mot Census Division: Aiyawa, Amun, Busuka, Gabumi, Maibang, Sibog, Silaling, Sindama, Sor, Suri, and Waibol.

2.8.1.3.6.7. Gira (GM-46), pop. 280.

Mot and Warup Census Divisions: Sisagel, Yauniai, and Yeimas.

2.8.1.3.7. *WARUP FAMILY (WR)*, pop. 3,170.

The Warup Family is located along the Rai coast from Saidor eastward to the Yaut River. Claassen (Claassen and McElhanon 1970) identified **ASAT**, **DEGENAN**, and **MORAFA**, and noted **DAHATING**, **GUIARAK**, and **MAMGAK (FORAK)**. To these Z'graggen (1973) has added **BULGEBI** and **YAGOMI**.

2.8.1.3.7.1. Dahating (WR-47), pop. 920.

Warup Census Division: Bandit, Fangger, Kakima, Kalalin, Kupdui, Mior, Mulumiang, Nampa-Suang, Somek (1/2), Umboldi, and Wilwilan. Claassen (Claassen and McElhanon 1970) listed this language as an isolate. Z'graggen (1973), however, has included the language in the Warup Family.

2.8.1.3.7.2. Bulgebi (WR-48), pop. 50.

Warup Census Division: Bulgebi.

2.8.1.3.7.3. Guiarak (WR-49), pop. 130.

Warup Census Division: Daban, Guiarak, and Kabumdangin.

2.8.1.3.7.4. Morafa (WR-50), pop. 610.

Warup Census Division: Bagen, Baru, Kasu, Somek (1/2), and Subura.

2.8.1.3.7.5. Forak (WR-51), pop. 160.

Warup Census Division: Mamgak.

2.8.1.3.7.6. Degenan (WR-52), pop. 500.

Warup Census Division: Mur, Sel, and Seure.

2.8.1.3.7.7. Yagomi (WR-53), pop. 140.

Warup Census Division: Yagomi. The people of this village were reported as speaking the **ASAT** language by Claassen (Claassen and McElhanon 1970).

2.8.1.3.7.8. Asat (WR-54), pop. 660.

Warup Census Division: Delbangat, Faigurup, Kapungapang, Kepoiak, Monara, Talmira, and Watang.

2.8.1.3.8. *YUPNA FAMILY (YP)*, pop. 8,290.

These languages are spoken on the northern slopes of the Finisterre Range near the Madang-Morobe District border. McElhanon (Claassen and McElhanon 1970) identified five languages and noted that there is a great amount of dialectal variation in the Yupna valley. To these five languages Z'graggen (1973) has added four more. A detailed survey is necessary, however, before a definitive statement can be made regarding the number and extent of the Yupna languages. The listing which follows is according to Z'graggen (1973).

2.8.1.3.8.1. Mebu (YP-55), pop. 320.

Mot and Upper Nankina Census Divisions: Aiyawa (1/3), Bagalawa, and Mebu.

2.8.1.3.8.2. Nankina (YP-56), pop. 2,170.

Upper Nankina Census Division: Bambu, Gumbaion, Gwarawon, Nambit, Miok, Tariknan, Tepmawon, and Yauangoba.

2.8.1.3.8.3. Gabutamon (YP-57), pop. 300.

Warup Census Division: Gabutamon.

2.8.1.3.8.4. Domung (YP-58), pop. 630.

Warup Census Division: Bwana, Moam, and Tapen.

2.8.1.3.8.5. Bonkiman (YP-59), pop. 250.

Yupna Census Division: Bonkiman and Yuwong.

2.8.1.3.8.6. Wandabong (YP-60), pop. 530.

Yupna Census Division: Baup, Narawum-Kwembum (1/2), Wandabong, and Windiluk.

2.8.1.3.8.7. Nokopo (YP-61), pop. 1,690.

Upper Nankina Census Division: Gua, Kangulat, Narawum-Kwembum (1/2), Nian, Nokopo, Teptep, and Wasikckop.

2.8.1.3.8.8. Kewieng (YP-62), pop. 940.

Yupna Census Division: Kewieng and Megan.

2.8.1.3.8.9. Isan (YP-63), pop. 1,460.

Uruwa and Yupna Census Divisions: Bungavat, Danatum, Isan, Mek, and Urop.

2.8.1.3.9. *URUWA FAMILY (UR)*, pop. 2,740.

In Claassen and McElhanon (1970:54) the writer stated that the Uruwa Basin contained at least three languages, but that there was the possibility that one of these languages could be regarded as five distinct languages. Recent reports by government field officers confirm the existence of three languages, one of which has a number of divergent dialects and is known by the name YAU.

2.8.1.3.9.1. Som (UR-64), pop. 90.

Uruwa Census Division: Gorgiok.

2.8.1.3.9.2. Sakam (UR-65), pop. 690.

Uruwa Census Division: Sakam (Sugan), Kundem, and Dinabat (Dingat), and one village, Kamdarang, located south of the Saruwaged range in the Erap Census Division.

2.8.1.3.9.3. Yau (UR-66), pop. 1,170.

Uruwa Census Division: Boksawin, Gotet, Kumdauron, Mitmit, Mup, Sapmanga, Sindamon, Worin, and Yawan. Preliminary lexicostatistical percentages indicate that the dialects share between 60-75% of the basic vocabulary.

2.8.1.3.9.4. Komutu (UR-67), pop. 610.

Timbe Census Division: Bonggi, Hamelingan, Komutu, Siang, and Sunde. These people are being assimilated by the more populous Timbe people and their language reflects considerable borrowing from Timbe.

2.8.1.3.9.5. Kawangi (UR-68), pop. 50.

Kawangi village, not noted separately on census reports, is located east of the Lower Timbe River (Timbe Census Division). Assimilation by the Timbe people is in an advanced stage and further field work is necessary to determine the exact status of the language.

2.8.1.3.9.6. Weleki (UR-69), pop. 130.

Kalalo Census Division: Weleki. The people are being assimilated by the Timbe and Selepet peoples, and, as is the case with Kawangi, further field work is necessary.

2.8.1.3.10. *ABAGA LANGUAGE (FAMILY-LEVEL ISOLATE) (AB)*, pop. 150.

The **ABAGA** language spoken by about 150 or so people in the Henganofi area of the Eastern Highlands District, in the Kamano language area (see 2.7.2.2.3. in this volume) also belongs originally to the Finisterre languages. It was discovered in 1969, and upon assessment by McElhanon and Wurm, the language was found to share between 25% and 30% basic vocabulary cognates with Kamano, most of these displaying purely Kamano forms, and to be structurally quite similar to Kamano, except for some features of its verb morphology. At the same time, McElhanon found that approximately 15% of its basic vocabulary showed obvious links with those of Finisterre languages, predominantly with languages of the Erap, Uruwa and Wantoat Families. McElhanon also identified the non-Kamano verb features mentioned above, as constituting Finisterre characteristics.

It seems therefore that Abaga is originally a Finisterre language whose speakers migrated south into the Kamano area and became subject to strong Kamano linguistic influence. They live in Kamano villages, with the villages of Kose 1, Kose 2 and Kanofi containing the highest number of Abaga speakers. Only about half a dozen very old men are monolingual, all others are bilingual Abaga and Kamano speakers, and Abaga appears to be rapidly receding before Kamano.

The group stretches north-eastwards into the Ramu slopes area (Kanofi village) and other speakers are alleged to be living in the north-east across the Ramu - which also indicates their origin.

Because of the strong Kamano influence, the inclusion of Abaga in a particular Finisterre family is difficult, though it appears to have its closest connections with the Erap and Uruwa Families. It has therefore been assigned the status of an isolate of indeterminate family affiliations within the Finisterre languages.

2.8.1.4. TYPOLOGICAL FEATURES

As in many lexicostatistical classifications which include a significantly large number of languages, there exists among the Finisterre-Huon languages a chaining phenomenon in which lexicostatistical relationships generally decrease as the number of languages separating the two compared languages increases. Thus the languages at

the extremities of the group show very low percentages of relationship. Moreover, the lower percentages of relationship among these languages are in some cases lower than some of the percentages of relationship between these languages and languages of other groups; e.g., the Kovai language isolate has in some cases quite low percentages of shared vocabulary with the languages of the Erap Family, viz., Munkip at 3%.

As mentioned in Claassen and McElhanon (1970:58) the languages of the Rai Coast Stock of the Madang Phylum are generally lexicostatistically related to the languages of the Finisterre group to the extent of 4-8% sharing of basic vocabulary, but they are separated from the latter because of differences in a few lexical items which are quite stable throughout the Finisterre-Huon languages and because of different typological features.

Although the writer has considerable data showing the grammatical features of the twenty-one Huon Peninsula languages, it appears that it will be a number of years before a comparable corpus of data will be collected in the forty-eight Finisterre languages. Therefore, one could not expect detailed grammatical comparisons of the majority of these languages for many years, perhaps decades, to come.

Of the Finisterre languages, however, three languages from separate lexicostatistical families have been studied in detail by members of the Summer Institute of Linguistics: Rawa (Rw.) of the Gusap-Mot Family by O.R. and M.F. Claassen, Wantoat (Wn.) of the Wantoat Family by D.R. and L. Davis, and Urii (Ur.) of the Erap Family by T. and G. Webb. Moreover, the writer has considerable data in the Kewieng language (Kw.) of the Yupna Family. Thus languages from four of the six families in the Finisterre group have been studied in more or less greater detail. Combining these four languages with five others from the Huon Peninsula group plus the Kovai (Kv.) language yields a collection of languages which may be said to be representative of the Finisterre-Huon stock as a whole. The five from the Huon Peninsula group are: Kâte (Kt.), Ono, Selepet (Sl.), Nabak (Nb.) and Kube (Kb.).

2.8.1.4.1. *PHONOLOGY*

Table A presents a tabulation of the phonemes which have been tentatively identified in each of the ten representative languages.[3] A question mark indicates that the phonemic status of that phone is in doubt.

Note that all of the languages indicate a contrast between voiceless stops and voiced (often prenasalized) stops at the labial, alveolar and velar positions. Only Rawa has a contrastive series of

voiced prenasalized stops in distinction to voiced stops. All of the languages except Rawa (which has open syllables) have final unreleased variants of the voiceless stops (except the labio-velar stop). The labio-velar series of stops include both labialized velar variants, [kʷ] and [gʷ] and double (labio-velar) stops, [kp] and [gb]. This series has not been established in Kovai although a few phonetic labialized velar stops have been observed.

All of the languages evidence nasals at the labial, alveolar and velar points of articulation but only Wantoat has a labialized velar nasal [ŋʷ].

There are two series of fricatives, flat and grooved. The former includes w, f, y, and h, whereas the latter includes the s and z. The z includes a voiced affricate variant dz and may also include ts as a variant.

A six vowel pattern predominates although the number of languages with a five vowel pattern is not insignificant. Vowel length is not a common feature and consonant length is even less common.

The syllable structure is quite simple throughout the representative languages. In all the languages, apparently any consonant may commence a syllable, although there is a usual restriction that r does not occur word initially (except in Kovai). Syllables are commonly closed by p, t, k, m, n, or ŋ (except in Rawa with only open syllables), and occasionally l (Kewieng and Kovai), z or s (Kovai).

Each language has its peculiarities regarding which consonants may occur contiguously at syllable boundaries within the word. Syllable nuclei are either simple or complex in that they may manifest single vowels or vowel clusters. Where vocoid or vowel clusters do occur there are usually restrictions on their sequence.

2.8.1.4.2. *NOUN PHRASE STRUCTURE*

There are certain features of the Noun Phrase structure which are found throughout the Finisterre-Huon languages here compared. A basic General Noun Phrase formula which incorporates only those tagmemes shared by these languages may be posited as follows: ±Possession ±Attributive ±Head ±Qualifier ±Numeral ±Demonstrative. Generally none of these tagmemes is obligatory. The regular personal pronoun substitute for a portion of the phrase, which in Selepet includes only the Possession, Attributive and Head tagmemes, but which in Wantoat includes the whole noun phrase.

The Possession tagmeme is expounded by a Possession Axis-relator Phrase. The axis of this phrase may be expounded by a variety of

TABLE A: PHONEMES

	p	t	k	kp	b	d	g	gb	m	n	ŋ	w	f	y	s	z	h	l	r	i	e	a	â	o	u
Kt.	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x
Ono	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x		x	x	x	x	x		x	x
Sl.	x	x	x		x	x	x		x	x	x	x		x	x		x	x	x	x	x	x	x	x	x	x
Kb.	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Nb.	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	?	x		x	x	x	x	x	x
Ur.	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x				x	x	x	x		x	x
Wn.	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x				x	x	x	x	x	x
Kw.	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x
Rw.	x	x	x		x	x	x		x	x	x	x		x	x		x		x	x	x	x	x	x	x
Kv.	x	x	x	?	x	x	x	?	x	x	x	x		x	x	x		x	x	x	x	x		x	x

In addition Wantoat has ŋw and æ; Rawa has mb, nd, ŋg and the voiced stop phonemes have voiced variants in the northern dialect which correspond to voiceless unaspirated variants in the southern dialect; Kube and Nabak evidence probable phonemically lengthened consonants; Kâte and Kewieng evidence phonemically lengthened vowels as also do Wantoat and Urii, but not in the full series; Kewieng has a possible phonemically distinct ts.

construction types or word classes, and the relator is expounded by a clitic. Examples from the Selepet language are: (1) a clause as in mukan ariop-gât senŋe âlâlâ *(yesterday, he went-of, things) the things of the one who went yesterday*; (2) a noun as in biolipyeŋa-gât opon *(their brothers-in-law-of, men's house) the men's house of their brothers-in-law*; (3) a regular personal pronoun as in nâ-gât emet *(me-of, house) my house*; and (4) an emphatic pronoun expounding the Possession tagmeme as in nine emet *my own house*.

The attributive tagmeme is usually expounded by a limited noun phrase, names or adjectival forms. Examples from Selepet are: lok yâhâp kutyetŋe *(man, two, their names) the names of the two men*; Andaria âwâŋe *(Andaria, his father) Andaria's father*; and kâniŋ den *(false, words) misrepresentations*.

The Head tagmeme is usually expounded by a wide variety of nominal forms.

The Qualifier tagmeme is expounded by a variety of adjectival forms. When this tagmeme is repeated there is a preferred semantic ordering of adjectives. Most frequently this ordering is: sex, colour, age, quality, shape, size, and quantity.

The Numeral tagmeme is expounded by numerals or adjectival forms indicating quantity, and the Demonstrative tagmeme is expounded by the demonstrative pronouns.

2.8.1.4.3. *WORD FORMATION*

The following processes of word formation have been observed to occur in most of the languages. Examples are from Selepet.

Intransitive verbs are derived by a verbalizer suffix which is apparently cognate for all the languages compared here. The root kârik *strong* plus -e yields kârihe *to become strong*.

Transitive verbs are derived by addition of bound object markers which function as transitive verbalizers. The root kâlâp *fire* plus -ku *him* yields kâlâpku *to arouse him*.

Intransitive verbs are derived by the addition of the verb peripheral suffixes. In these cases the root usually occurs with a different syntactic function as well: giriŋ-ban *I laughed* from giriŋ *laughter*.

Adjectives are derived by an adjectivizer suffix which is apparently cognate in all languages compared, and significantly, for each of the languages it is either identical or nearly identical in the particular language with the nominal possessive marker indicating third person singular. Thus bâle-ŋe (*bad*, adjectivizer) *bad* and sen-ŋe (*eye, his*) *his eye*.

Nouns are frequently derived by reduplication from a verbal form: ise-ise *weeping* from ise- *to weep*.

Adverbs are derived by reduplication with or without heterophonic reduplication (i.e., a reduplication of the total word but with a vowel and/or consonant shift): lohot lohot *weakly* from lohot *weak* and hâtik mitik *in a crosswise manner* from hâtik- *to cross over*.

2.8.1.4.4. *NOUNS*

There are two subclasses of nouns found throughout the Finisterre-Huon languages. The first subclass includes body parts and kinship terms and occurs with obligatory possession-marking suffixes. The second subclass includes other nouns and the possession-marking suffixes are optional. In most of the Huon Peninsula languages the first subclass of nouns has the structure +nucleus +number +possession with the morphemes occurring in the number tagmeme indicating singular, dual and plural.

The morphemes indicating dual are related to the numeral two and are cognate in many of these languages. The languages of the

Finisterre subgroup and the Kovai language apparently do not indicate number in this manner although the Rawa language has a plural marker occurring between the nucleus and the possession-marking suffixes. A vowel shift in the possession-marking suffix indicates singular or plural number in Urii.

Examples from Selepet are: ata-Ø-ne (*el.br.*-sg.-*my*) *my elder brother*, ata-yâhât-ne (*el.br.*-du.-*my*) *my two elder brothers*, and ata-lip-ne (*el.br.*-pl.-*my*) *my elder brothers*. The numeral *two* is yâhâp.

2.8.1.4.5. *REGULAR PERSONAL PRONOUNS*

The regular personal pronouns (Table B) show strong stability, and cognate forms occur throughout the Finisterre-Huon languages. The submorphemic formatives (see Pike 1963) making up the pronoun person-number composites are significant in their stability. An analysis of the pronoun composite yields the structure +person +number +number, in which the person formative is manifested by a consonant, the first number formative by a vowel, and the second number formative by a consonant. This formula holds for Selepet, Nabak, Urii, Kewieng and Wantoat.

TABLE B: REGULAR PERSONAL PRONOUNS

	1s	2s	3s	1d	2d	3d	1p	2p	3p
Sl.	nâ	gâ	yâk	net	yet	yâkyet	nen	yen	yâkyen
Nb.	nâ	gâ	ek	net	it	ekget	nen	in	ekŋen
Ono	na	ge	eŋe	ŋere	ŋire	ere	ŋene	ŋine	eŋe
Kb.	ni	gi	i	niri	iri	iri	nini	ini	ini
Kt.	no	go	e	nâhe	ŋohe	yahe	nâŋe	ŋoŋe	yaŋe
Ur.	na	ga	adi	indi	sidi	adi	indi	sidi	adi
Kw.	nâk	gâk	uŋun	nit	dzil	dzil	nin	dzi	dzi
Wn.	nâ	gâ	an	nit	git	git	nin	gin	gin
Rw.	no	ke	ŋu	nâre	yari	eraga	nâre	ye	garo
Kv.	non	gok	i	it	ŋot	yot	in	ŋon	yon

For proto-Finisterre-Huon (PFH) the field structure and proto-formatives may be posited as in Table C.

TABLE C: REGULAR PERSONAL PRONOUN FORMATIVES

		sg.	sg.		non-sg. du.			non-sg. pl.		
			(*a)	(*k)		(*i)	(*t)		(*i)	(*n)
1st per.	(*n)	n	a	k	n	i	t	n	i	n
2nd per.	(*ŋg)	ŋg	a	k	ŋg	i	t	ŋg	i	n
3rd per.	(*y)	y	a	k	y	i	t	y	i	n

For the PFH forms as given above, the vowel *a indicating 'singular' represents a back vowel as opposed to a front vowel (represented by *i) indicating 'non-singular' number. At an earlier stage the vowels may have been identical but a shift to a front vowel occurred in the 'dual' and 'plural' number. The *k formative indicating 'singular' has been generally lost in the 'first' and 'second' person forms in all the Huon Peninsula languages and remains in the 'third' person form in only a few languages. The formative *t indicating 'dual' is found throughout most of the languages as either t or as one of its possible morphophonemic variants. Thus in Kube, Ono and Rawa, the addition of a final vowel necessitates a change from t to r. In Urii of the Erap family of languages the *t is represented by either nd or d, the latter reflecting a loss of prenasalization. In Kewieng and a couple of the Uruwa languages the final t has occasionally weakened to a final l, often accompanied by slight friction. The formative *n indicating 'plural' is found in all those languages which distinguish 'dual' and 'plural'. In Urii and most of the other languages of the Erap family the plural forms are absent and their function has been taken on by the dual forms. Note in Kâte that the 'dual' is indicated by h and the 'plural' by ŋ. One might suppose that in the development of the Kâte language a vowel was added to a final glottal stop which represented a neutralization of the contrast between syllable-final p, t and k (see McElhanon 1970:228).

The addition of the vowel, however, may not have yielded the original morphophonemic variants; thus final glottal stop was replaced by h rather than by r and final ŋ remained ŋ. An alternative hypothesis, however, might be to consider the final t and k (before neutralization occurred) as reflexes of a single proto-form (see McElhanon and Voorhoeve 1970:27, 53 for t and k as reflexes of *C). Note that in a few languages, e.g., Kewieng and Rawa, the formative *n indicating 'plural' was lost in the second and third person forms.

The formative *n indicating 'first person' is found throughout the Finisterre-Huon languages, although in a few languages, e.g., Nabak, Kube, Urii and Kovai, it is lost in the dual and plural forms. In the

Ono dual and plural forms the formative is identical to the second person formative ŋ and it may be theorized that the distinction between first and second person was lost in the consonantal formatives because the distinction was present in the vowel formatives e (first and third person) and i (second person).

The second person formative *ŋg has a variety of reflexes. In the second person singular form of most of the languages it is (ŋ)g with the prenasalization absent in some languages or subphonemic in others. In the dual and plural forms the reflex ŋ, representing the velar prenasalization of the proto forms, is found in a number of the Huon Peninsula languages (e.g., Nabak (only in third person forms), Ono and Kâte) and in Kovai. The reflexes z in Kewieng, s in Urii and y in most other languages may reflect a process of palatalization of the g after the vowel change from a back vowel to a front vowel took place (see McElhanon and Voorhoeve 1970:65).

2.8.1.4.6. *POSSESSIVE SUFFIXES*

TABLE D: NOMINAL POSSESSIVE SUFFIXES

	1s	2s	3s	1d	2d	3d	1p	2p	3p
Sl.	ne	ge	ŋe	netŋe	yetŋe	yetŋe	nenŋe	yeŋe	yeŋe
Nb.	n	di	ŋaŋ	(n)it	(ŋ)it	(ŋ)it	n[a]	(ŋ)in	(ŋ)in
Ono	ne	ŋone	ine	se	ŋitne	etne	dze	ŋine	ene
Kb.	na	ga	a	nira	gira	gira	nina	gina	gina
Kt.	nane	ge	tikne/ ne	nâhek	ŋekik	yekik	nâŋek	ŋeŋik	yeŋik
Ur.	na	ga	ni	ni	sic	sic	ni	sic	sic
Kw.	no	go	ŋi	nit	dzil	dzil	nin	dzi	dzi
Wn.[b]	na	ga	ŋâ	nit	sâ	nâ	nin	sâ	nâ
Rw.	ne	ge	ŋo	nare	yari	yari	nane	ye	ye
Kv. I	in	ok	on	uwit	uŋot	uwot	uwin	uŋon	uwon
Kv.II	noŋ	goŋ	oŋ	toŋ	netoŋ	yotoŋ	inŋoŋ	ŋenoŋ	yoŋoŋ

[a] n represents a reduction or contraction of nin.

[b] allomorphic forms observed for all Wantoat suffixes in Table D.

The nominal possessive suffixes show striking similarities throughout. For each language compared here, with the exception of the third person singular form, all forms are either identical to or similar to the regular personal pronoun forms. The third person singular form is always identical to or similar to the adjectivizer suffix.

The Selepet possessive suffixes probably represent a fusion of the noun with a following adjective which was derived from the regular personal pronoun suffixed by the adjectivizer (McElhanon 1972:64). These fossilized adjectivizers are evident in the possessive suffixes for Selepet, Ono, Kube and Kovai (II). As with the regular personal pronouns, cognate forms are found throughout the languages. The Kovai series I forms evidence considerable vowel harmony with the preceding stem/root vowels.

2.8.1.4.7. *DEMONSTRATIVE PRONOUNS*

The demonstrative pronouns are quite stable throughout the languages of the Finisterre-Huon group. These demonstratives denote five positions relative to the speaker and hearer: *this* (near the speaker), *that* (near the hearer), *that over there* (removed from both speaker and hearer), *that up there* (removed from both speaker and hearer), and *that down there* (removed from both speaker and hearer). The demonstratives are given in Table E.

TABLE E: DEMONSTRATIVE PRONOUNS

	what	*this*	*that*	*there*	*up*	*down*	*which*
Sl.	wuân	yu	ya	eda [enda]	ewa	eba [emba]	woSA/ woDA
Nb.	kureki	pi	ke	inda	gwa	ba	DE
Ono	ono(ka)	i	ye	eri	we(ti)	gbe(ti)	DI
Kb.	nemak	yo(mi)	i(mi)	eri(mi)			DI
Kt.	wemo	zi	i	okni	faik	yuwik	weNI
Ur.	naasit	i/ya	u/wa	do			inDE
Kw.	ni	o	ya	asto	kwe	mok-(?)	ZI
Wn.	dâsi	a	u	ato	e	amu	
Rw.	nda	ŋa	ŋu	ande	awe	ame	
Kv.	muk	ye	ya/i	dri			awon

The form which is most stable is that for *that over there* which is cognate in all the languages. Second in stability is the form meaning *which* with a common element (in capitals in Table E) occurring in most languages. This element occurs compounded with another element wo in Selepet, and apparent cognates of wo occur in Kâte and Kovai. Note that the forms meaning *this* and *that* are often involved in semantic shifts; the form meaning *this* in one language will have a cognate form meaning *that* in another language and vice versa. Moreover, some languages evidence a vowel difference which in Selepet reflects nearness

or remoteness but which in the other languages may not have any distinction.

2.8.1.4.8. *VERBS*

Throughout the languages of the Finisterre-Huon group the verb structure may be described by positing a verb nucleus as opposed to a verb periphery. The nucleus manifests either a transitive verb stem or an intransitive verb root/stem.[4] The transitive verb stem consists of a root plus an object-marking affix. Most intransitive verbs thus far observed are roots although intransitive verb stems are not totally absent; e.g., in Selepet, intransitive verbs may be derived from roots by the suffixation of -e as in lohole- *to become weak* from lohot *weak*.

Verbs may generally be divided into two structural subclasses, independent and dependent. The independent verbs manifest a number of tenses and/or modes, and the independent verb periphery manifesting these tenses and/or modes may be divided into two subtypes on the basis of linear order of suffixal tagmemes, one subtype involving the imperative mode. The dependent verb periphery may also be divided into two subtypes on the basis of linear order of suffixal tagmemes, heteropersonal and homopersonal.

Generally speaking there are two distinctive subtypes of independent verb peripheries. There is some variation among the languages as to which tenses and/or modes fall within each periphery. For all the languages, however, the imperative mode with or without other modes or tenses occurs in one periphery and the past and present (indicative) tenses occur in a second periphery.

Table F presents the verbal suffixes indicating the imperative mode. The vowels in these forms apparently indicate mode. The consonant formatives indicating number are highly stable in the first person forms.

Note that singular number is marked by a labial stop or fricative. Dual is generally marked by an alveolar obstruent and plural generally by an alveolar nasal. Except for Kâte and Kovai these formatives are syllable initial. Kovai is one of the most divergent of these languages and in these morphemes the consonant and vowel has metathesized. Kâte represents an aberrant subgroup of languages, and the structure of the first person dual and plural forms appears to be based by analogy upon the structure of the second and third person, dual and plural forms. Most of these languages have complex person-number composites in the second and third person, dual and plural. The analysis of

these forms must await the collection of more data in those languages which are represented only by basic vocabulary lists, and ultimately it must await an application of the comparative method and reconstruction.

TABLE F: NUMBER FORMATIVES IN FIRST PERSON FORMS

	singular	dual	plural
Selepet	-be	-de	-ne
Nabak	-bi	-di	-ne
Ono	-be	-te	-ŋem
Kube	-ba	-zi	-ni
Kâte	-pe	-nak	-naŋ
Urii	-wak	-dam	-nam
Kewieng	-wo	-do	-no
Wantoat	-pa	-ta	-na
Rawa	-we	-re	-ye
Kovai	-ip	-et	-en

The second type of periphery is quite regular throughout all the languages compared and usually includes two past tenses or one past tense and one present tense. The structure is ±benefactive +mode +tense +person-number. The distinguishing features of this periphery are that the order of the tagmemes is generally fixed and that the mode tagmeme is distinct from the tense tagmeme and is manifested by 'habituative mode' morphemes which may be shown to be derived from verb compounding. Generally there is little difficulty in identifying the constituent morphemes of this subtype of verb periphery.

The habituative mode (hab.) morphemes of these languages may be shown to be related to the verbs meaning *to do* or *to live* and to have a historical basis in verb compounding. In the historical development of these forms fusion has taken place so that some of the current habituative mode morphemes in some of the languages bear only slight resemblance to the original verb forms from which they developed. Examples from the various languages supporting the conclusion that the habituative mode suffix was derived through verb compounding follow:

(1) KOVAI as in ge-me (hab.-*he spoke*) *he used to speak* and ga-gap (hab.-*I will go*) *I will always go*; compare gi *to live*.

(2) KÂTE as in ra-e-kak (*to go*-hab.-*he* (present tense)) *he always goes*; compare e-kak *he does it*; and ra-yu-yek (*to go*-hab.-*he* (past tense)) *he used to go*; compare yu-yek *he lived*.

(3) **KUBE** as in ke-an-zak (*to go*-hab.-*he* (past tense)) *he always goes*; compare an-zak *he lives*.

(4) **ONO** as in ari-mai-ke (*to go*-hab.-*he* (past tense)) *he always goes*; compare ma-ke *he did it*.

(5) **SELEPET** as in ari-m-ap (*to go*-hab.-*he* (past tense)) *he always goes*; compare m-ap *he lives*.

(6) **NABAK** as in ma-met-zin (*to live-to go-he* (present tense)) *he always goes*; ma-ko-tap-mayan (*to live-to come-to be situated-he* (past tense)) *he used to come*; and ma-we-ma-be (*to live-to sleep-to live-he* (future tense)) *he will always sleep*.

(7) **KEWIENG** as in kʌ-ʌ-zak (*to go*-hab.-*he* (past tense)) *he always goes*; compare ʌ-zak *he did it*.

(8) **RAWA** as in âroro-ârâ-te (*going*-hab.-*he* (present tense)) *he always goes*; compare ârâ-te *he lives*.

(9) **URII** as in fa-ar-rik (*to go*-hab.-*I* (present tense)) *I always go*; the morpheme -ar cannot be identified with an Urii verb, but it is apparently cognate with Rawa ârâ-.

All of the languages of the Finisterre-Huon Stock evidence two subtypes of dependent verb periphery, namely, homopersonal (same actor as that of the following verb) and heteropersonal (different actor from that of the following verb). For detailed comments on this subject see McElhanon 1973.

2.8.1.4.9. *DESIDERATIVE VERB CONSTRUCTIONS*

The concepts of desire, intent, purpose and inception of action are often not formally distinguished in some of the languages of the Finisterre-Huon Stock. Thus a single utterance in a vernacular may be rendered equally well by the English glosses *I am about to, I want to, I intend to,* or *I purpose to.* There are a number of different constructions which are used to indicate these concepts, and when a language has more than one construction type usually one of the types has a much higher frequency of occurrence. This section of the study only concerns the most common constructions which are purported to indicate *desire.* These construction types are:

(1) (verb root/stem in the imperative mode) + *to say* (dependent homopersonal form) + *to do.* This construction is by far the most common although there are minor variations particularly with regard to the occurrence of concord.

(2) (noun derived by verb root/stem reduplication + benefactive clitic + the verbs *to do* or *to exist, be* with the benefactive suffixes and a third person singular subject marker.

Examples from the languages compared follow:

(1) **KÂTE** as in ra-pe mu-râ e-nare-kak (*go-I* (imperative), *say-ing, do-to me-it* (past tense)) *I want to go*; and ra-k mu-râ e-gare-kak (*go-you* (imperative), *say-ing, do-to you-it* (past tense)) *you want to go.*

(2) **KUBE** as in ke-ma-nze wan-zua (*go-ing-say, do-I* (past tense)) *I want to go*; and ke-ma-nze wan-zak (*go-ing-say, do-he* (past tense)) *he wants to go.*

(3) **ONO** as in ari rara-ane simin-nan-maike (*go, speaking-for, agreeable-to me-it* (past tense)) *I want to go;* and ari rara-ane simin-gan-maike (*go, speaking-for, agreeable-to you-it* (past tense)) *you want to go.*

(4) **SELEPET** as in ari-we sâ-m o-an (*go-I* (imperative), *say-ing, do-I* (past tense)) *I want to go*; and ari-re sâ-m o-ait (*go-we* (du., imperative) *say-ing, do-we* (du., past tense) *we* (du.) *want to go.*

(5) **NABAK**; in the following examples the morpheme -sât is apparently cognate with the Selepet verb sâ *to say*: met-sât nâ-ya (*go*-sât, *think-I* (past tense)) *I want to go*; and met-sât nâ-nak (*go*-sât, *think-you* (past tense)) *You want to go.*

(6) **KEWIENG** as in kok-do nandi-zat (*go-for, think-I* (present tense)) *I want to go*; and kok-do nandi-zal (*go-for, think-you* (present tense)) *you want to go.*

(7) **RAWA** as in yure-we e-ro âmbu-te (*kill them-I* (imperative mode), *say-ing, came-he* (past tense)) *he came intending to kill them*; and yure-we e-ro âmbu-tero (*kill them-I* (imperative mode), *say-ing, came-we* (du., past tense)) *we* (du.) *came intending to kill them.*

(8) **WANTOAT**; in the following example the vowel i is analyzed as a transition vowel by Davis (1964:164), but it may be an allomorph of the verb si *to exist*: ku-na-ge i-niŋ (*go-we* (imperative/intentive)-*for, exist-they* (future tense)) *they will want to go.*

(9) **URII** as in guu gagaap-gat niŋ to-ŋa ta-rik (*you, seeing you-for, thus, say-ing, do-I* (present tense)) *I am here wanting to see you.*

2.8.1.4.10 *BOUND OBJECT AND BENEFACTIVE MARKERS*

These markers include the object-marking affixes which occur as part of the transitive verb stem and the benefactive-marking suffixes which occur in the benefactive tagmeme immediately following the verb stem.

A comparison of these markers clearly shows the genetic relationship of the representative languages, although it is necessary to compare whole paradigms in order to recognize the relationship. Most of the languages evidence bound object markers, and all the transitive verb roots of these languages may be divided into subclasses on the basis of their occurrence with a particular set of allomorphs of the object marker. For example, in Selepet there are three paradigms of object marker allomorphs. The first person singular allomorphs are -nek (subclass one), -nihi (subclass two) and -noho (subclass three) (see McElhanon 1972:38-40 for a detailed treatment of these). Examples of subclass one verb roots are: gâi-nek-sap (*cut-me-he* (past tense)) *he cut me*, me-nek-sap (*hold-me-he* (past tense)) *he held me* and kat-nek-sap (*put-me-he* (past tense)) *he dismissed me*. Examples of subclass two verb roots are: mewale-nihi-ap (*defraud-me-he* (past tense)) *he defrauded me*, mabot-nihi-ap (*await-me-he* (past tense)) *he awaited me*, and pene-nihi-ap (*join-me-he* (past tense)) *he joined me*. Examples of subclass three verb roots are: tân-noho-ap (*bone-me-he* (past tense)) *he helped me*, kâlâp-noho-ap (*fire-me-he* (past tense)) *he aroused me*, and kâdât-noho-ap (*back-me-he* (past tense)) *he turned his back on me*.

In some of the languages these object marker allomorphs are mainly suffixal (e.g., Selepet) while in others they are mainly prefixal (e.g., Wantoat). In a number of languages neither the suffixal nor the prefixal forms appear to predominate (e.g., Nabak). In general the Huon Peninsula languages show a predominance of suffixal forms while the Finisterre languages show a predominance of prefixal forms.

In many of the languages one or more of the verb subclasses contain a verb root morpheme represented by zero and these roots are distinguished by the object marker allomorph. Thus, in Selepet the relevant forms are Ø-nek-sap (*see-me-he* (past tense)) *he saw me*, Ø-nihi-ap (*give/bite-me-he* (past tense)) *he gave it to me* or *it bit me*, and Ø-noho-ap (*hit-me-he* (past tense)) *he hit me*. This phenomenon is most developed in the Huon Peninsula group, particularly in the Ono language. In the Finisterre group, the phenomenon has importance in the diachronic study. Various synchronic studies (e.g., Wantoat by Davis

(1964a), Urii by Webb (1967) and Rawa by the Claassens (1968)) have not noted the possible occurrence of any verb root zero morpheme.

For most of these languages a basic number of verb roots are usually found to represent all of the allomorphic subclasses of the object markers. These verb roots are those meaning *to hit/kill, to give,* and *to see.* In some synchronic studies (Davis 1964a; the Claassens 1968; and Webb 1967) these verb roots are described as being the lone members of individual verb classes while in others (Pilhofer 1927a, 1933; Wacke 1931) they are described as object verbs. As would be expected there is a great diversity among the languages regarding the number of allomorphic subclasses of the object markers, ranging from a single class in Wantoat to fourteen subclasses in Ono (see Wacke 1931:174-7).

A comparison of these allomorphic subclasses of one language with the verb roots of another language yields evidence for forming a hypothesis explaining this diversity in the number of allomorphic subclasses of the object markers found in the various languages. It has been noted that for many of these languages it is useful to posit a zero morpheme for one verb root with each allomorphic subclass.

A comparison of the various allomorphic subclasses with the verb roots for *to bite* (Table G) and *to see* (Table H) reveals that the forms are intricately related and that these relationships extend throughout the Finisterre-Huon languages and perhaps into other groups as well (see McElhanon and Voorhoeve 1970:94-7). A definitive statement will therefore have to await further study.

TABLE G: to bite

	1s	2s	3s	1d	2d	3d	1p	2p	3p
Sl.	nihi	gihi	ihi	nitki	yitki	yitki	ningi	yingi	yingi
Nb.	ni	gi	i	nndi	itdi	itdi	ndi	indi	indi
Ono	nirot	girot	ki	ŋetot	ŋitot	etot	ŋedot	ŋidot	edot
Kb.	ni	gi	ki	niri	iri	iri	nini	ini	ini
Kt.	kiknu	kikgu	ki	kik-nâfo	kik-ŋofa	kik-yofa	kik-nâpo	kik-ŋopa	kik-yopa
Ur.	ni	gi	si	indi	sidi	idi	indi	sidi	idi
Kw.			inzi	(other forms were not elicited satisfactorily)					
Wn.	nasi	gasi	isi	nisi	dasi	yesi	nisi	dasi	yesi
Rw.	nâki	gâki	ki	yâki	yâki	yâki	yâki	yâki	yâki
Kv.	ilne	ilge	ile	ilte	il-ŋete	il-yete	il-inye	il-ŋene	il-yeŋe

TABLE H: to see

	1s	2s	3s	1d	2d	3d	1p	2p	3p
Sl.	nek	gek	ek	nelek	yelek	yelek	nenek	yek	yek
Nb.	nik	gik	ek	nndik	itdik	itdik	ndik	indik	indik
Ono	nan	gan	ka	ŋot	ŋut	ot	ŋon	ŋun	on
Kb.	nɨn	gɨn	kən	nirii	irii	irii	ninii	inii	inii
Kt.	hone-nu	hone-gu	hone-Ø	hone-nâfo	hone-ŋofa	hone-yofa	hone-nâpo	hone-ŋopa	hone-yopa
Ur.	naab	gaab	ka	niib	saab	yaab	niib	saab	yaab
Kw.	namdʌ	gamdʌ	ko	nimdʌ	damdʌ	damdʌ	nimdʌ	damdʌ	damdʌ
Wn.	nadu	gadu	ka	nidu	dadu	ka	nidu	dadu	ka
Rw.	neyâ	geyâ	keno	yeyâ	yeyâ	yeyâ	yeyâ	yeyâ	yeyâ
Kv.	amal-ne	amal-ge	ane	amal-te	amal-ŋete	amal-yete	amal-inye	amal-ŋene	amal-yene

Note, however, that a comparison of the various bound object marker allomorphs reveals two significant features. Firstly, for many of the languages the bound object marker allomorphs which occur with a zero verb root show cognate forms throughout many of the object marker paradigms. Compare, for example, the object marker allomorphs occurring with the verb *to bite* (Table G) in Selepet, Nabak, Kube and Urii. Secondly, and equally significant, is the fact that the third person singular object marker in one or more languages is often cognate with the verb root morphemes in other languages. Note that the third person singular form in Ono and Kube is ki and that this form is the same as the root morpheme in Rawa and Kâte. It is important to note that the Kâte bound object markers occurring with ki are suffixes but in Rawa they are prefixes. This should caution anyone in using prefixal or suffixal object markers as a heavily weighted typologically contrastive feature. Moreover, both suffixal and prefixal forms are occasionally found in the same language. It is premature to state whether or not the proto-form of ki represents the root for *to bite* in the Finisterre-Huon languages. One hypothesis is that the verb *to bite* as well as many other verbs were represented in the proto-language by zero morphemes. These zero morpheme verb roots were then distinguished by the allomorphic subclasses of the bound object marker. In the historical development of these languages the third person singular allomorph of the object marker of the proto-language became the verb root in later stages of development, and to this verb root were affixed the object marker allomorphs of another subclass. By this process the number of allomorphic subclasses of the object marker

were reduced in the daughter languages. In support of this hypothesis a number of observations may be given.

The allomorphs of the third person singular object marker of the Ono language are often apparently cognate with the verb root morphemes of other languages. This may indicate that the Ono language with its fourteen allomorphic subclasses of the object marker preserves more archaic forms than most other languages. It has already been noted that both Rawa and Kâte have a verb root ki *to bite* which is apparently cognate with the third person singular allomorph ki of the object marker in Ono.

Furthermore, note that for the verb *to see* (Table H) the third person singular forms in Selepet, Nabak, Ono, Urii, Kewieng, and Wantoat are recognizable as apparent cognates. The Selepet and Nabak forms evidence a metathesis of vowel and consonant when compared with the Ono form.[5]

In the development of the Ono and Selepet languages from their putative proto-language, a large number of the allomorphic subclasses of the object markers were preserved in Ono, but lost in Selepet. Table I presents the allomorphic subclasses for the Ono verbs *to hold, to burn, to copulate with someone,* and *to shoot.* The Ono third person singular object marker (in capitals) for each of these verbs is cognate with the respective verb root in Selepet (also in capitals).

It seems likely that in the development of Selepet the third person singular object markers of the proto-language became the verb roots in Selepet, and by this process the number of allomorphic subclasses were reduced in Selepet.

TABLE I: ONO AND SELEPET OBJECT MARKERS

	to hold		*to burn*	
	ONO	SELEPET	ONO	SELEPET
1s	neu-	me-nek-	nae-	se-nek-
2s	geu-	me-gek-	gae-	se-gek-
3s	MA-	ME-Ø-	DZE-	SE-Ø-
1d	ŋepu-	me-nelek-	ŋeso-	se-nelek-
2d	ŋipu-	me-yelek-	ŋiso-	se-yelek-
3d	epu-	me-yelek-	eso-	se-yelek-
1p	ŋebu-	me-nenek-	ŋedzo-	se-nenek-
2p	ŋibu-	me-yek-	ŋidzo-	se-yek-
3p	ebu-	me-yek-	edzo-	se-yek-

(continued on next page)

	to copulate		*to shoot*	
	ONO	SELEPET	ONO	SELEPET
1s	neit-	het-nek-	nato-	yerâ-nek-
2s	geit-	het-gek-	gato-	yerâ-gek-
3s	GIT-	HET-Ø-	YATO-	YERÂ-Ø-
1d	ŋekit-	het-nelek-	ŋekotat-	yerâ-nelek-
2d	ŋikit-	het-yelek-	ŋikotat-	yerâ-yelek-
3d	ekit-	het-yelek-	ekotat-	yerâ-yelek-
1p	ŋegit-	het-nenek-	negotat-	yerâ-nenek-
2p	nigit-	het-yek-	nigotat-	yerâ-yek-
3p	egit-	het-yek-	egotat-	yerâ-yek-

Another significant feature of bound object marker morphology which should be noted is the similarity between the object marker allomorphs occurring with the verb *to give someone* and the benefactive markers (Table J). Because of this similarity and because the benefactive tagmeme immediately follows the verb root in all languages thus far studied, one may posit that the benefactive markers have their origin in a verbal compound which involved the verb *to give someone* as the second element of the compound. It is also significant that the phenomenon of a third person singular object marker allomorph being cognate with verb roots in other languages has not been observed with the verb *to give someone*. This may be due to the fact that some sort of stability resulted from the presence of the nearly identical forms of the benefactive markers. The object marker allomorphs of the verbs *to hit*, *to see*, and others did not have this added factor leading to stability.

TABLE J: *to give* with benefactive markers underneath

	1s	2s	3s	1d	2d	3d	1p	2p	3p
Sl.	nihi	gihi	waŋ	nitki	yitki	yitki	ningi	yingi	yingi
	nihi	gihi	wagi	nitki	yitki	yitki	ningi	yingi	yingi
Nb.	na	ga	sa	nnda	itda	itda	nda	inda	inda
	(benefactive markers identical)								
Ono	nin	gin	man	ŋepon	ŋipon	epon	ŋebon	ŋibon	ebon
	(benefactive markers identical)								
Kb.	nim	gim	mi	niri-pi	iripi	iripi	nini-pi	inipi	inipi
	(benefactive markers identical)								
Kt.	nare	gare	râkne	nâkte	ŋakte	yakte	nâre	ŋare	yare
	nare	gare	kne	nâkte	ŋakte	yakte	nâre	ŋare	yare
Ur.	naam	gaam	am	niim	saam	im	niim	saam	in
	naa	gaa	ŋa	niim	saam	yam	niim	saam	yam

(continued on next page)

	1s	2s	3s	1d	2d	3d	1p	2p	3p
Kw.	nami	gami	ami	nimi	dami	yomi	nimi	dami	yomi
	(benefactive markers identical)								
Wn.	namu	gamu	imu	nimu	damu	yemu	nimu	damu	yemu
	ŋamu	gamu	ŋamu	nimu	damu	yâmu	nimu	damu	yâmu
Rw.	nunâ	gunâ	inâ	yunâ	yunâ	yunâ	yunâ	yunâ	yunâ
	(benefactive markers identical)								
Kv.	tane	tage	tatine	taite	ta-ŋete	ta-yate	ta-inye	ta-ŋane	ta-yaŋe
	(Benefactive markers could not be elicited satisfactorily.)								

2.8.1.5. CONCLUSION

The foregoing serve to demonstrate the apparent genetic relationships of the languages of the Finisterre-Huon group. The structural and morphological similarities are of such a character that one may suppose that they generally preclude borrowing. Moreover, the data yield evidence for one to hypothesize that the morphology of proto-Finisterre-Huon was considerably simpler than that of any of the present daughter languages. It is probable that the nominal possessive-marking suffixes represent a later development from postposed adjective stems derived from pronoun roots by the suffixation of an adjectivizer. Furthermore, the verbal suffixes indicating benefaction, habitual mode, desiderative mode and intentive mode are probably a result of the compounding of verb roots, or they represent phrasal compounds. Any verbal prefixes indicating negation or causation also are the result of probable compounding. One may hypothesize therefore that the morphology of the verb periphery of proto-Finisterre-Huon consisted of simply suffixes indicating person, number and tense/mode.

NOTES

1. Field work in the Huon Peninsula and the Finisterre ranges was carried out during 1964-1967 and 1968-1969 while the writer was under the auspices of the Australian National University and the Summer Institute of Linguistics.

2. Research in the languages of the Gusap-Mot and Warup families was carried out by O.R. Claassen of the Summer Institute of Linguistics. Claassen was killed in April 1972, and the details of these languages have been determined from his unpublished field notes.

3. Because time was not available for a detailed phonemic analysis of Kewieng, Kovai and Kube, the examples from these languages are given in a near phonemic orthography. This is particularly true of the mid and low central vowels. The writer's tentative analysis of the Nabak consonantal phonemes presented in this paper was done in 1968 and differs from a tentative analysis by the Fabians (1971). The symbol â represents a vowel phoneme with a phonetic norm of [ɔ].

4. Longacre's (1964:101-102) distinction between root and stem is here followed; viz., stems represent a class of syntagmemes having internal structure, but roots have no internal structure and therefore are not syntagmemes.

5. Another apparently related series is found in Kâte, Kube, Rawa, and Kovai. The root in Kâte is hone and apparently cognate forms are found in the third person singular forms in Kube (kən), Rawa (keno, vowel metathesis), and Kovai (ane).

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2.8.2. THE MADANG-ADELBERT RANGE SUB-PHYLUM

John A. Z'graggen

2.8.2.0. INTRODUCTION

The Madang-Adelbert Range Sub-Phylum (MASP) languages are located in the central part of the Madang District in the north-eastern portion of the New Guinea mainland. Their linguistic neighbours are the Sepik-Ramu Phylum languages in the west, the Finisterre Stock languages in the east, and the East New Guinea Highlands Stock languages in the south. A number of Austronesian languages are located along its coastal areas. The Wasembo language in the Gusap Valley in the Morobe District is probably another member of the MASP group, though aberrant and geographically split off from the main body (see 2.15.4.2. in this volume).

The aim of this study is to give a brief account of attempts to group or classify the languages of the Madang District (for a more detailed study of the history of research in Papuan linguistics in general see part 2.1. in this volume). In 2.8.2.2. a tentative classification of the MASP languages has been presented. The division into dialects and languages is based on the informants' opinion and on the inspection of data. For a survey study such as this one, time was insufficient to conduct a systematic test on the mutual intelligibility of these languages. It must be kept in mind that observations alone can be quite misleading. The grouping into families or stocks is based on Swadesh' principles and further subdivisions such as super-stocks and sub-phyla are on the basis of suggestions by Wurm (see 2.2.5. in this volume). Since the present chapter had to be prepared shortly after my finishing fieldwork in November-December 1973, it was only possible to a limited extent to compare systematically all of the approximately 300 items collected and to

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establish the percentages of shared basic vocabulary cognates by computer techniques. However, about sixty words from each language were compared by the inspection method, and a tentative series of cognates tabulated and evaluated. From this, the tentative classification as presented in 2.8.2.2. of this study emerged. In 2.8.2.3., the personal pronouns in their free forms will be given and compared with the pronoun sets in Papuan languages (see 2.3.3. in this volume). In part 2.8.2.4., a comparative wordlist of eight items will be given to illustrate the unity and diversity of this language group and to demonstrate its lexical links with the Trans-New Guinea languages in general.

Other sources have been studied carefully, but the classification as presented in this study is based on the author's own materials, as are the data presented in 2.8.2.3. and 2.8.2.4. As much as possible was retained of O. Claassen and K. McElhanon's (1970) classification of the eastern part of the Rai Coast languages and Z'graggen's (1971a) classification of the Madang and Adelbert Range languages. Changes and corrections were made wherever newly acquired data made this necessary.

The author[1] carried out his first linguistic research in the Madang District in the Mugil area, to the north-west of Madang town, from August 1964 to January 1966. The aim at that time was to obtain an adequate picture of the linguistic situation of the area for which he was responsible as a missionary of the Roman Catholic Church. The linguistically complex area awakened in him a special interest in survey and comparative studies, rather than in a study of an individual language from which he would have benefited only for a small part of the area of mission interest. Another stretch of fieldwork was undertaken under the auspices of the Australian National University from January 1967 to March 1968 and again another from July to October 1969. The aim at that time was to survey as much as possible of the Madang District. The results were tentatively presented in Z'graggen 1971a. Fieldwork in the Madang District was resumed again under the auspices of the Anthropos Institute and in collaboration with the Australian National University in January 1971, and was completed in November 1973. The aim then was to complete the surveying of the Madang District. Districts are becoming more and more political, economic and social units, and studies on a district level in fields such as linguistics should in the long run be advantageous for administrative and educational purposes. The author was in many ways assisted by the excellent work of Nora Umbricht who helped collect and organise data from January 1971 to December 1972. To facilitate the collecting of data, a comparative wordlist was programmed (Z'graggen 1971b) which contained the standard non-cultural vocabulary items together with a list of cultural vocabulary items and other items which were of

particular interest to the author. A comparison of cultural vocabulary items should be of interest, though they are not to be considered in a study of genetic relationships between language groups. The data were collected through New Guinea Pidgin. To avoid misunderstandings, elicitation was carried out in complete sentences, rather than through using single lexical items. For instance, the word *where* was also elicited in a sentence such as *where do you go?* For further information on the author's method of collecting his data, see Z'graggen 1971b. The words and word-stems were systematically compiled in Z'graggen forthcoming a-d. The linguistic survey of the Madang District has been presented in Z'graggen 1975.

2.8.2.1. HISTORY OF RESEARCH

In this part a short account of the main contributions to the study of the Madang-Adelbert Range languages will be given and attempts to classify these languages will be discussed briefly. A more complete study has been given in Z'graggen 1971a and 1975 (see also 2.1.1.4.2. in this volume).

2.8.2.1.1. *MIKLUKHO-MAKLAĬ*

The Russian scholar N.N. Miklukho-Maklaĭ (Miklucho-Maclay) (1951:157-85) was the first scholar to collect linguistic data in languages of the north coast of New Guinea. He collected wordlists in nine languages which are members of the MASP. Later, Zöller (1891) published short wordlists from six member languages of the MASP. However, Zöller failed to recognize the basic difference between Austronesian and Papuan languages and regarded all the languages with which he was concerned, i.e. Austronesian and Papuan languages, as constituting a unit. His attempts at proving this were, however, unsatisfactory (see (II) 4.2.3.). Schmidt (1900) incorporated six of the MASP languages into his summarizing studies of German New Guinea. He described in detail the basic difference between the Austronesian and Papuan languages on the north coast of New Guinea. Dempwolff (1905) published another eight wordlists in languages of the MASP. Hanke's (1909) study comprising a grammar and dictionary of the Bongu language is the only comprehensive study of a single language which has been published. Kaspruš (1942-45) contributed extensive wordlists and some sentence materials to four languages: Mugil (Saker), Garus (Em), Murupi (Ate) and Rempi (A'e). Schmitz (1960) adds a surprisingly large list of language or dialect names. Unfortunately, he does not make a clear difference between languages and language groups. Some of his names are merely village names, others are unidentifiable, unless his linguistic

data are made available. Loukotka (1957) and Salzner (1960), in their overall studies, list language names and group them mainly in geographical order. The same applies to Ray (1919:32), though he did publish a list of pronouns, numerals and twenty item wordlist.

2.8.2.1.2. *CAPELL*

Capell included the Madang District in his survey work carried out in 1950 and obtained valuable new field materials in a number of languages. But his notes on the interrelationships of his Bogia languages are ambiguous and apt to be misinterpreted (see below). First Capell (1952:205) mentions with regard to a possible interrelationship of the Bogia languages:

> ...; any relationships with other groups lie beyond the present possibility of elucidation. From the amount of material gathered, only indications even of the smaller set of relationships can be given. There are three main groups of languages from a structural point of which*, with which vocabulary in the main agrees: I. Monumbo-Ngaimbom-Lilau. II. The languages east of Lilau. III. The western and inland languages.

Thus a trichotomy of language groups is clearly stated, but they are "only indications". In his linguistic survey of the South-Western Pacific some years later, Capell ((1954), 1962a:49)[2] writes:

> The languages seem to form two main groups, one embracing the Monumbo-Ngaimbom coastal people, and including Bogia station itself, and the other covering the remainder of the sub-district (see Map V). This does not imply complete homogeneity in the second area, but a relatively close connection between the languages as compared with those of the Monumbo-Ngaimbom group.

Capell (1962a:51) then gives a comparative wordlist of four items in nine languages located in the Bogia sub-district and comments:

> This short word-list shows the groupings sufficiently clearly for it to appear that there is a certain amount of interrelationship throughout, but that the Monumbo-Ngaimbom languages stand apart, with a suggestion of linking with Gamia; Igom, Tanggum and Makarub are connected and through Makarub there is a bridge with Hubia-Bosngun. This Makarub connection holds further east till it gradually disappears in the Mugil region.

The Banara, Ulingan, Wanambre and Mugil languages "are also related in many ways to the Tangum-Makarub group" (Capell 1962a:52). These many ways were never substantiated by Capell. In inspecting his four-word lists, it is rather surprising to see that he suggests a link of Gamia (Gamei) with Monumbo. The original three structurally different groups have now become two "main groups" or maybe even one. In his overall study of Oceanic linguistics, Capell (1962b:373) repeats the "tentative classification into three groups", but at the same time he calls them now the Bogia group and sees this group in a wider context when he writes:

*Present author's note: misprint: should read "view".

> There is probably at any rate a phylum connection of the Bogia group with the Mugil languages (Kasprus 1942-45) and those in the hinterland of Madang, Nobonob, Amele etc.

Thus the original trichotomy becomes a subgrouping or is given up, as he takes more languages into consideration in the course of time.

Bogia Station is one of the linguistically most complex corners in New Guinea. Four structurally different language groups meet within ten miles of the Bogia District Office. These are: Group I: Torricelli languages; Group II: Adelbert Range languages; Group III: Ramu languages and finally, Sepa, an Austronesian language (see Z'graggen 1971a).

The Monumbo-Lilau (Ngaimbom) languages are members of the Torricelli Phylum. The author could, on his field trip in 1967-68, classify these two languages neither with languages to the west nor to the east of Lilau. Laycock, from an inspection of Vormann-Scharfenberger's (1914) and Z'graggen's materials of Lilau, identified Monumbo-Lilau finally as members of the Torricelli language group. A closer relationship of Monumbo with Valman was already suspected by Schmidt (1900:132). Kirschbaum (1926:277) also postulated a closer relationship of Monumbo with the Sepik languages, especially with Buna. Schebesta (1913:881) was however inclined to believe in a closer link between Monumbo and the Mikarew (Ramu) language. The Monumbo and Lilau languages are separated from each other by a fourth group of languages in the Bogia Sub-District area, the Sepa language, which is Austronesian and located closest to the Bogia station. The name of the Lilau-speaking tribe is Ngaimbom and Lilau is the name of a new settlement of the same tribe on the coast. The Ngaimbom or Lilau people are inland people with no special interest in the sea, but the Monumbo people are economically tied to it. Despite their difference in culture, their languages both belong lexically and structurally to the same language family.

The languages east of Lilau (Group II) are linked with the Madang-Adelbert Range Sub-Phylum and the languages west of Lilau (except Sepa and Monumbo) are linked with the Sepik-Ramu Phylum. Capell's wordlist of Atemple (Atemble) belongs to the Anor language (Ramu Super-Stock) and the Moresada (Murusapa) language has been assigned to the Adelbert Range Super-Stock, Josephstaal Stock, because of structural similarities.

2.8.2.1.3. *VOEGELIN C. AND F.*

The Voegelins (1965:50-5) propose a Madang (Bogia) Phylum while referring to Capell:

> Some relationship apparently exists among nearly all the languages of the Madang District from its north-western border with the Sepik District along the coast and immediately inland as far east as the northern side of Astrolabe Bay beyond Madang. The relationships

> between neighboring languages in some of the sub-areas are close enough to be obvious, but the relationships between the languages of different areas are more remote and less certain.
>
> The geographic groups of languages ... may actually be language families, or possibly branches of a single family to which a few language isolates are more distantly related.

The Voegelins (1965:51ff.) propose three language groups which differ to some extent from those of Capell (1952). The groups are: 1) western and inland Bogia Sub-District group, 2) East-of-Bogia Coastal Group and 3) Ramu River group. The establishment of the Ramu River group is a new development after Capell's grouping. The Monumbo and Lilau (Ngaimbom) languages and those of the Rai Coast and Astrolabe area are regarded as unclassified.

2.8.2.1.4. *WURM*

Wurm (1971:606ff.) proposes a Bogia Phylum which consists of A) the Western and Central Stock, which includes the Western Family and Central Family and the Makarub, Bunabun and Wanambre languages, B) Monumbo, C) Tangum, D) Annaberg, and E) Eastern families and fifteen not yet classified languages. Wurm has compared some of the available material systematically for the first time, and gives percentage figures of shared vocabulary. His percentage figures are astonishingly high, though they match to some extent Z'graggen's (1971a) classification despite the latter's lower percentages. There is a considerable overlap of vocabulary between the Adelbert Range and the Ramu languages which justifies to some extent Wurm's Bogia Phylum. On the basis of some typological characteristics, Wurm (1971:610) distinguishes three different types of languages within the Bogia Phylum. Wurm was able to incorporate into his findings Z'graggen's (1968) field report, which was prepared at the invitation of the Anthropos Institute before he completed his fieldwork. In March 1968, shortly after returning to the Australian National University, Z'graggen again made a modified list of language names available to Wurm.

Wurm incorporated these two sources into Wurm 1971 and this explains the appearance of some new language and language group names. Z'graggen (1971a) however adopted or dropped some of his earlier names. Z'graggen (1971a) also proposed the Ramu Phylum, whose western boundaries were at the time not yet known, and which is now part of the Sepik-Ramu Phylum (Laycock 1973). Regarding the languages east of Lilau, Z'graggen (1971a) proposed their inclusion into the Adelbert Range and Madang Phyla. The interrelationship between these two separate phyla was not yet established at that time, but a possible link between the Adelbert Range and Madang languages and their extension further east was suggested by Z'graggen (1971a:103).

2.8.2.1.5. *GREENBERG*

In his Indo-Pacific hypothesis, Greenberg (1971) proposes a Monumbo language group which combines Capell's groups I and III. This Monumbo group constitutes a part of his North New Guinea Stock, which extends to the Sepik and to Irian Jaya. But none of the cognate series which Greenberg gives for illustration, link the Monumbo-Lilau (Ngaimbom) languages with the rest of his Monumbo sub-group, and therefore, his material militates against the existence of this link. The languages east of Lilau, and including the languages of the Astrolabe Bay area, form in Greenberg's opinion the Northeastern or the Madang sub-group. Ray (1919) to whom Greenberg refers, proposed a Bongu or Astrolabe group, but this group did not include the westernmost part which Greenberg includes, nor does Capell's group include Bongu and the Astrolabe area. Greenberg gives only two words which link the Madang languages with the Adelbert Range languages. The word for *star* **boi** is very common in the Madang languages, but very rare in the Adelbert Range languages. The word for *to die* **uma**, however, links most of the Adelbert Range languages with the Rai Coast languages, but the forms in the Mabuso Stock area deviate. This is hardly enough evidence to justify the grouping. Greenberg (1971:821) states furthermore:

> the Northern group which includes Capell's group I and III, extends far to the east where it encounters a sharp linguistic boundary with the Northeastern subfamily, a boundary already recognized by Capell in principle.

But Capell's (1962b) two basic groups are Monumbo and the rest, i.e. the groups east and west of Lilau.

2.8.2.1.6. *CLAASSEN AND McELHANON*

Claassen and McElhanon (1970) pioneered the linguistic survey of the Finisterre Range area which extends into the eastern portion of the Madang District. They established the western boundaries of the Finisterre language group in the Madang District and proposed for the first time a new language stock which they called the Rai Coast language stock. In 1969, Claassen kindly made available to Z'graggen a language map of the eastern part of the Madang District, upon the latter's request. McElhanon and the Summer Institute of Linguistics (S.I.L.) also kindly made available their field materials of the Madang District to Z'graggen for inspection in September 1972. These sources of the Summer Institute of Linguistics were studied by Z'graggen, and their pioneer work is herewith acknowledged. Z'graggen, however, subsequently proceeded to collecting his own material, mainly during 1973. Claassen's extensive contribution to the comparative linguistics of the eastern part of the Madang District came to an abrupt end when he tragically died in an air crash accident.

2.8.2.2. TENTATIVE CLASSIFICATION

The Madang-Adelbert Range Sub-Phylum languages are located in the Central part of the Madang District. Z'graggen (1971a) proposed two separate phyla, each with its special structural characteristics, such as prefixing in the Adelbert Range and suffixing in the Madang languages. An interphylic relationship between the two phyla was only suggested (Z'graggen 1971a:103). Wurm (personal communication) proposed that the two language groups constituted the Madang-Adelbert Range Sub-Phylum, which is a subgroup within the Trans-New Guinea Phylum. The pronouns and parts of the lexicon support such a combination, but the differences in structure may call for an explanation.

There were several gaps in Z'graggen's (1971a) survey involving the central part of the Adelbert Range and the southern part of the Upper Ramu area. Further gaps were discovered during the fieldwork period of 1971-73. In December 1973, still existing gaps were marked on the language map with "?". The languages of the Astrolabe Bay area and hinterland defied classification and the western boundary of Claassen and McElhanon's Rai Coast Stock was not yet established in 1971. Special care was taken to identify the linguistic affiliations of all the villages listed in the Village Directory 1973. This led to the discovery of some new languages. As much of the previous classification was retained as the inspection of materials justified. A few corrections became necessary as new materials were forthcoming and new languages were discovered. Family names which had been made up of the first syllables of language names were replaced by the names of rivers centrally located in the linguistic area, if new members of the respective families were discovered. Some language names were dropped, e.g. Bogadjim, where they proved to be names of dialects, or changed (e.g. Korapa) if they appeared to be unsuitable for language names.

The grouping of the MASP languages is shown in Table A. Most of the population figures are based on the 1973 census. The letters and numbers refer to the language map of the Madang District (Z'graggen 1973). The Bai language was identified only when work was well advanced, and is for this reason marked as Bx. The classification is based on an inspection of only a portion of the linguistic materials available and for this reason it is only tentative, but it should prove useful in organizing the data and in describing the linguistic situation. Undoubtedly, the classification as proposed now has yet to be confirmed or modified by a systematic comparison of more items.

The location of the language groups and languages is given on the accompanying map.

TABLE A: MADANG-ADELBERT RANGE SUB-PHYLUM 75,796

MADANG SUPER-STOCK 36,054

RAI COAST STOCK 14,593
Evapia F. 1,969
B1 Sinsauru 476
B2 Asas 261
B3 Sausi 437
B4 Kesawai 534
B5 Dumpu 261
Kabenau F. 1,175
B6 Arawum 75
B7 Kolom 209
B8 Suroi 600-700
B9 Lemio 175
B10 Pulabu 116
Yaganon F. 1,148
B11 Yabong 368
B12 Ganglau 154
Bx Dumun (Bai) 42
B13 Saep 584
Peka F. 5,418
B14 Usino 1,630
B15 Sumau 2,333
B16 Urigina 1,340
B17 Danaru 115
Nuru F. 2,619
B18 Usu 93
B19 Erima 264
B20 Duduela 685
B21 Kwato 753
B22 Rerau 235
B23 Jilim 409
B24 Yangulam 180
Mindjim F. 2,264
B25 Bom 1,130
B26 Male 393
B27 Bongu 415
B28 Songum 326

MABUSO STOCK 21,461
Kare F. 384
C1 Kare 384
Kokon F. 4,869
C2 Girawa 3,568
C3 Munit 345
C4 Bemal 642
Gum F. 6,979
C5 Sihan 314
C6 Gumalu 271
C7 Isebe 845
C8 Amele 4,014
C9 Bau 1,716
C10 Panim 133
Hanseman F. 9,229
C11 Rapting 348
C12 Wamas 135
C13 Samosa 94
C14 Murupi 308
C15 Saruga 132
C16 Nake 187
C17 Mosimo 58
C18 Garus 2,081
C19 Yoidik 266
C20 Rempi 592
C21 Bagupi 51
C22 Silopi 140
C23 Utu 583
C24 Mawan 269
C25 Baimak 441
C26 Matepi 238
C27 Gal 224
C28 Garuh 2,193
C29 Kamba 889

ADELBERT RANGE SUPER-STOCK 39,742

MUGIL STOCK 2,303
D1 Mugil 2,303

ISUMRUD STOCK 11,779
Dimir F. 1,668
E1 Dimir 1,668
Mabuan F. 800
E2 Malas 302
E3 Bunabun 498
Kowan F. 9,311
E4 Korak 205
E5 Waskia 9,106

PIHOM STOCK 15,279
Kaukombaran F. 6,335
F1 Pay 769
F2 Pila 669
F3 Saki 2,403
F4 Tani 2,494
Kumilan F. 1,805
F5 Ulingan 1,692
F6 Bepour 57
F7 Moere 56
Tiboran F. 2,335
F8 Kowaki 31
F9 Mawak 31
F10 Hinihon 1,100
F11 Musar 684
F12 Wanambre 489
Omosan F. 1,431
F13 Koguman 759
F14 Abasakur 672
Numagenan F. 2,672
F15 Wanuma 1,272
F16 Yaben 702
F17 Yarawata 98
F18 Bilakura 34
F19 Parawen 432
F20 Ukuriguma 134
Amaimon F. 701
F21 Amaimon 701

JOSEPHSTAAL STOCK 6,357
Sikan F. 3,393
G1 Sileibi 259
G2 Katiati 3,134
Osum F. 577
G3 Osum 577
Pomoikan F. 1,841
G4 Pondoma 597
G5 Ikundun 1,047
G6 Moresada 197
Wadanginam F. 546
G7 Wadaginam 546

WANANG STOCK 2,961
Atan F. 1,771
H1 Atemple 65
H2 Angaua 1,706
Emuan F. 1,040
H3 Emerum 683
H4 Musak 357
Paynamar F. 150
H5 Paynamar 150

BRAHMAN 1,063
I1 Isabi 280
I2 Biyom 379
I3 Tauya 347
I4 Faita 57

2.8.2.2.1. *THE MADANG SUPER-STOCK*

The Madang Super-Stock consists of two language stocks: the Mabuso Stock, extending east of the Lower and Middle Gogol River, and the Rai Coast Stock, extending in an easterly direction.

2.8.2.2.1.1. The Rai Coast Stock (B)

The Rai Coast Stock consists of six families: Evapia, Kabenau, Yaganon, Peka, Nuru and Mindjim. Claassen and McElhanon (1970) first proposed the Rai Coast Stock which comprised at that time only four families.

2.8.2.2.1.1.1. **The Evapia Family**, named after the Evapia River, consists of the following languages: Sinsauru, Asas, Sausi, Kesawai and Dumpu. The former name Koropa has been abandoned, because this village is bilingual, i.e. Asas and Sausi speaking. The Claassen and McElhanon wordlist for Koropa is of Asas. Kaikovu is not listed in the Village Directories for 1968 and 1973. The Claassen and McElhanon Kaikovu wordlist is Sinsauru. Another Kaikovu wordlist in the S.I.L. archives was collected in Kesawai village and is in the Kesawai language. The Claassen and McElhanon Taga wordlist was also collected in Kesawai village and is also in the Kesawai language. The name Watiwa is unknown to the informants and was for this reason replaced by Dumpu, a well-known name. Claassen and McElhanon (1970) link Dumpu (Watiwa) with the Kabenau Family, but a membership with Evapia seems more likely. Claassen and McElhanon (1970: 60) note with reference to Dumpu (Watiwa): "its inclusion in the Kabenau Family is tenuous and it may prove to be a language isolate".

2.8.2.2.1.1.2. **The Kabenau Family** as first proposed by Claassen and McElhanon (1970) consisted of disconnected sections on the Upper Ramu and the Middle Kabenau Rivers, and the coastal area. The newly proposed family still consists of three geographically separated sections. It consists of: Arawum, Kolom, Suroi, Lemio and Pulabu. Arawum and Pulabu are new members. Zöller's (1891) wordlist of Kadda belongs to the Pulabu language. There must be a misunderstanding as far as Claassen and McElhanon's Gurumbu language is concerned. Claassen and McElhanon indicate a relationship of 71% between Gurumbu and Lemio. The present writer could not find a Gurumbu language wordlist in the S.I.L. archives. Informants finally assured the present writer that Gurumbu and Lemio were one language. A check with the help of data which the present writer collected himself at Gurumbu village confirmed this view. Suroi is referred to by earlier writers as the Rimba or Rumba language. Aufinger (in Kaspruś 1942-45) published, under the name Rimba, a short wordlist of their everyday language and their secret language, and some sentence materials.

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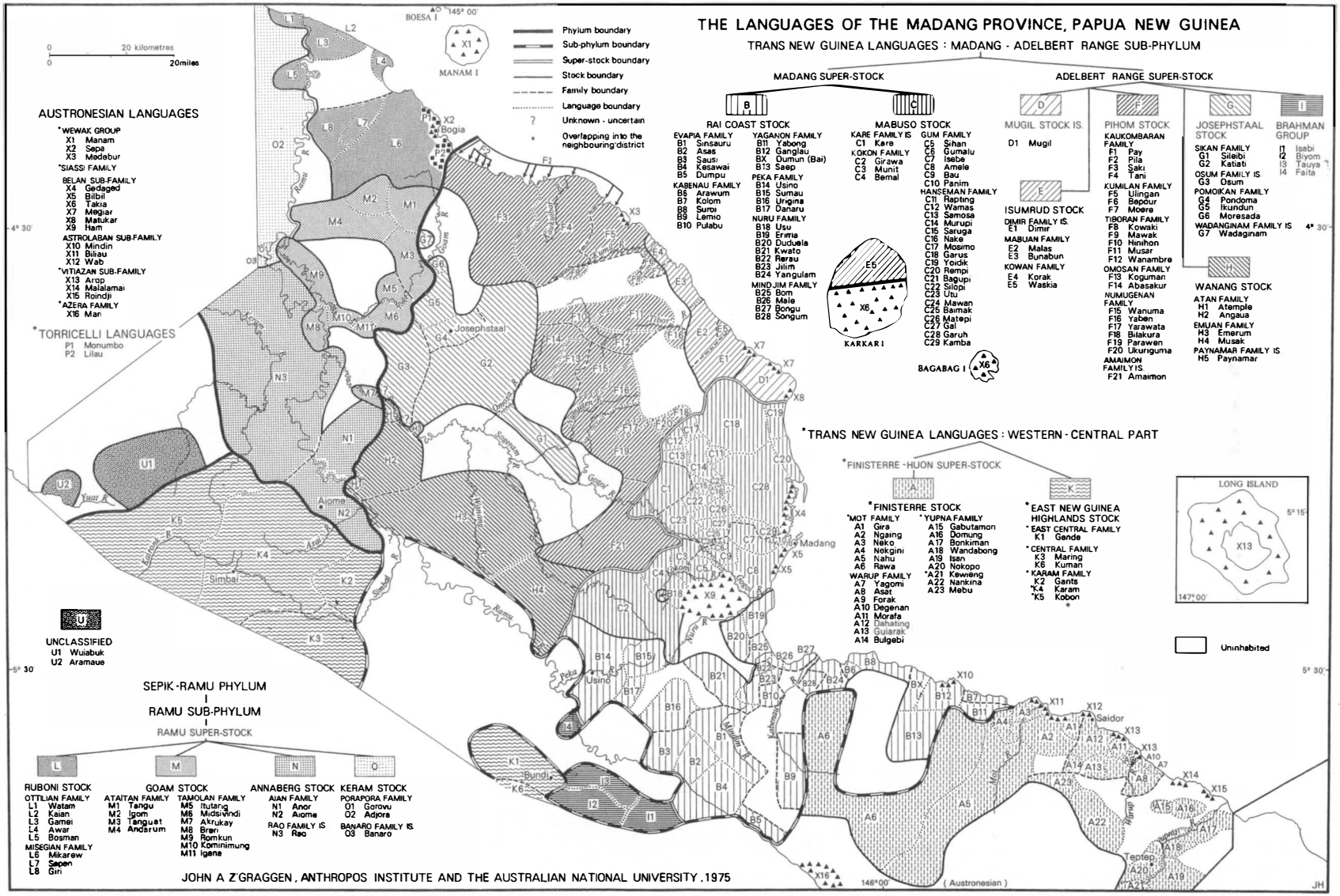
THE LANGUAGES OF THE MADANG PROVINCE, PAPUA NEW GUINEA
TRANS NEW GUINEA LANGUAGES : MADANG - ADELBERT RANGE SUB-PHYLUM
MADANG SUPER-STOCK
ADELBERT RANGE SUPER-STOCK
RAI COAST STOCK
EVAPIA FAMILY
B1 Sinsauru
B2 Asas
B3 Sausi
B4 Kesawai
B5 Dumpu
KABENAU FAMILY
B6 Arawum
B7 Kolom
B8 Suroi
B9 Lemio
B10 Pulabu
YAGANON FAMILY
B11 Yabong
B12 Ganglau
BX Oumun (Bai)
B13 Saep
PEKA FAMILY
B14 Usino
B15 Sumau
B16 Urigina
B17 Danaru
NURU FAMILY
B18 Usu
B19 Erima
B20 Duduela
B21 Kwato
B22 Rerau
B23 Jilim
B24 Yangulam
MINDJIM FAMILY
B25 Bom
B26 Male
B27 Bongu
B28 Songum
MABUSO STOCK
KARE FAMILY IS
C1 Kare
KOKON FAMILY
C2 Girawa
C3 Munit
C4 Bemal
GUM FAMILY
C5 Sihan
C6 Gumalu
C7 Isebe
C8 Amele
C9 Bau
C10 Panim
HANSEMAN FAMILY
C11 Rapting
C12 Wamas
C13 Samosa
C14 Murupi
C15 Saruga
C16 Nake
C17 Mosimo
C18 Garus
C19 Yoidik
C20 Rempi
C21 Bagupi
C22 Silopi
C23 Utu
C24 Mawan
C25 Baimak
C26 Matepi
C27 Gal
C28 Garuh
C29 Kamba
MUGIL STOCK IS.
D1 Mugil
ISUMRUD STOCK
DIMIR FAMILY IS.
E1 Dimir
MABUAN FAMILY
E2 Malas
E3 Bunabun
KOWAN FAMILY
E4 Korak
E5 Waskia
PIHOM STOCK
KAUKOMBARAN FAMILY
F1 Pay
F2 Pila
F3 Saki
F4 Tani
KUMILAN FAMILY
F5 Ulingan
F6 Bepour
F7 Moere
TIBORAN FAMILY
F8 Kowaki
F9 Mawak
F10 Hinihon
F11 Musar
F12 Wanambre
OMOSAN FAMILY
F13 Koguman
F14 Abasakur
NUMUGENAN FAMILY
F15 Wanuma
F16 Yaben
F17 Yarawata
F18 Bilakura
F19 Parawen
F20 Ukuriguma
AMAIMON FAMILY IS.
F21 Amaimon
JOSEPHSTAAL STOCK
SKAN FAMILY
G1 Sileibi
G2 Katiati
OSUM FAMILY IS.
G3 Osum
POMOIKAN FAMILY
G4 Pondoma
G5 Ikundun
G6 Moresada
WADANGINAM FAMILY IS
G7 Wadaginam
BRAHMAN GROUP
I1 Isabi
I2 Biyom
I3 Tauya
I4 Faita
WANANG STOCK
ATAN FAMILY
H1 Atemple
H2 Angaua
EMUAN FAMILY
H3 Emerum
H4 Musak
PAYNAMAR FAMILY IS
H5 Paynamar
Phylum boundary
Sub-phylum boundary
Super-stock boundary
Stock boundary
Family boundary
Language boundary
Unknown - uncertain
Overlapping into the neighbouring district
0 20 kilometres
0 20miles
AUSTRONESIAN LANGUAGES
WEWAK GROUP
X1 Manam
X2 Sepa
X3 Medebur
SIASSI FAMILY
BELAN SUB-FAMILY
X4 Gedaged
X5 Bilbil
X6 Takia
X7 Megiar
X8 Matukar
X9 Ham
ASTROLABAN SUB-FAMILY
X10 Mindin
X11 Bilau
X12 Wab
VITIAZAN SUB-FAMILY
X13 Arop
X14 Malalamai
X15 Roindji
AZERA FAMILY
X16 Mari
TORRICELLI LANGUAGES
P1 Monumbo
P2 Lilau
UNCLASSIFIED
U1 Wuiabuk
U2 Aramaue
SEPIK-RAMU PHYLUM
RAMU SUB-PHYLUM
RAMU SUPER-STOCK
RUBONI STOCK
OTTILIAN FAMILY
L1 Watam
L2 Kaian
L3 Gamei
L4 Awar
L5 Bosman
MISEGIAN FAMILY
L6 Mikarew
L7 Sepen
L8 Giri
GOAM STOCK
ATAITAN FAMILY
M1 Tangu
M2 Igom
M3 Tanguat
M4 Andrum
TAMOLAN FAMILY
M5 Itutang
M6 Midsivindi
M7 Akrukay
M8 Brari
M9 Romkun
M10 Kominimung
M11 Igana
ANNABERG STOCK
AIAN FAMILY
N1 Anor
N2 Aiome
RAO FAMILY IS
N3 Rao
KERAM STOCK
PORAPORA FAMILY
O1 Gorovu
O2 Adjora
BANARO FAMILY IS.
O3 Banaro
*TRANS NEW GUINEA LANGUAGES : WESTERN - CENTRAL PART
*FINISTERRE - HUON SUPER-STOCK
*FINISTERRE STOCK
*MOT FAMILY
A1 Gira
A2 Ngaing
A3 Neko
A4 Nekgini
A5 Nahu
A6 Rawa
WARUP FAMILY
A7 Yagomi
A8 Asat
A9 Forak
A10 Degenan
A11 Morafa
A12 Dahating
A13 Guiarak
A14 Bulgebi
*YUPNA FAMILY
A15 Gabutamon
A16 Domung
A17 Bonkiman
A18 Wandabong
A19 Isan
A20 Nokopo
*A21 Kewieng
A22 Nankina
A23 Mebu
*EAST NEW GUINEA HIGHLANDS STOCK
*EAST CENTRAL FAMILY
K1 Gende
*CENTRAL FAMILY
K3 Maring
K6 Kuman
*KARAM FAMILY
K2 Gants
*K4 Karam
*K5 Kobon
LONG ISLAND
X13
147°00'
5° 15'
Uninhabited
BOESA I
MANAM I
BAGABAG I
KARKAR I
Bogia
Josephstaal
Madang
Simbai
Aiome
Usino
Bundi
Saidor
Tepteр
Yuat R.
Ramu R.
Sepik R.
Gogol R.
Jimi R.
Waghi R.
Kaindi R.
Kumi R.
Omdiwim R.
Simbai R.
Kaironk R.
Kabenau R.
Peka R.
Mindjim R.
Nuru R.
Warup R.
Mot R.
Gende
Kuman
Karam
Kobon
Gants
Maring
Nankina
Nokopo
Gabutamon
Domung
Bonkiman
Wandabong
Isan
Kewieng
Bulgebi
Dahating
Guiarak
Morafa
Asat
Forak
Degenan
Yagomi
Rawa
Nahu
Nekgini
Nako
Gira
Aiome
Anor
Rao
Banaro
Adjora
Gorovu
Paynamar
Emerum
Musak
Atemple
Angaua
Wadaginam
Moresada
Ikundun
Pondoma
Osum
Sileibi
Katiati
Isabi
Biyom
Tauya
Faita
Wadagingam
Amaimon
Yaben
Wanuma
Abasakur
Koguman
Tani
Saki
Pila
Pay
Ulingan
Bepour
Moere
Kowaki
Mawak
Hinihon
Musar
Wanambre
Mugil
Dimir
Malas
Bunabun
Korak
Waskia
Kare
Girawa
Munit
Bemal
Sihan
Gumalu
Isebe
Amele
Bau
Panim
Rapting
Wamas
Samosa
Murupi
Saruga
Nake
Mosimo
Garus
Yoidik
Rempi
Bagupi
Silopi
Utu
Mawan
Baimak
Matepi
Gal
Garuh
Kamba
Sinsauru
Asas
Sausi
Kesawai
Dumpu
Arawum
Kolom
Suroi
Lemio
Pulabu
Yabong
Ganglau
Oumun (Bai)
Saep
Usino
Sumau
Urigina
Danaru
Yangulam
Bom
Male
Bongu
Songum
Duduela
Kwato
Rerau
Jilim
Erima
Usu
Monumbo
Lilau
Wuiabuk
Aramaue
Mikarew
Sepen
Giri
Watam
Kaian
Gamei
Awar
Bosman
Tangu
Igom
Tanguat
Andrum
Itutang
Midsivindi
Akrukay
Brari
Romkun
Kominimung
Igana
Anor
Aiome
Rao
Gorovu
Adjora
Banaro
JOHN A Z'GRAGGEN, ANTHROPOS INSTITUTE AND THE AUSTRALIAN NATIONAL UNIVERSITY. 1975
(Austronesian)
JH

Schmitz (1960) lists Rimba (Suroi) incorrectly as Melanesian. As regards Kolom, Dempwolff (1905:240-3) published an extensive wordlist under the name Langtub (now spelled Lamtub).

2.8.2.2.1.1.3. **The Yaganon Family** consists of the languages Yabong, Ganglau, Saep and Bai, and was first posited by Claassen and McElhanon (1970). Only when his work was well in progress did the author identify Maklaĭ's (1951) wordlist of the Bai village language as a member of the Yaganon Family, and has for this reason marked it with Bx to avoid renumbering. Tappenbeck (1901) gives the location of Bai village in the Kulilau and Dumun area, which constituted a gap in the author's linguistic survey. Bai village is not listed in the Village Directory of 1973. The Yaganon Family is aberrant within the Rai Coast languages.

2.8.2.2.1.1.4. **The Peka Family** consists of the Usino, Sumau, Urigina and Danaru languages. Z'graggen (1971a) refers to this group as the Usur language group. Since Danaru is a new member of the family, the river name Peka has been adopted. Claassen and McElhanon (1970) refer to this group as the Usino Family, and include in it also the Bagasin or Girawa language. The Claassen and McElhanon wordlist for Bagasin-Girawa was, however, collected in Sumau village and this list belongs to the Sumau village language as a comparison of the material reveals. Bagasin-Girawa belongs lexically and typologically to the Mabuso Stock.

2.8.2.2.1.1.5. **The Nuru Family** consists of the languages Usu, Erima, Duduela, Kwato, Rerau, Jilim and Yangulam. Usu was pushed further south from the remainder of the Nuru Family by the Ham people who are Austronesian.

2.8.2.2.1.1.6. **The Mindjim Family** consists of the languages Bom, Male, Bongu, Songum. Bom is referred to by other sources also as the Bogadjim language. Z'graggen (1971a) lists a Bom and Bogadjim language, but at a later stage of research he realized that the two formed one language.

2.8.2.2.1.2. **The Mabuso Stock (C)**

The Mabuso Stock comprises one family-level isolate: Kare, and three families: Kokon, Gum and Hanseman, and this language group appears to be uniform in lexicon and in structure.

2.8.2.2.1.2.1. **The Kare family-level Isolate** belongs basically to the Mabuso language group, though it is aberrant in some respects. This might be due to its close geographical proximity to the Adelbert Range languages.

2.8.2.2.1.2.2. **The Kokon Family** consists of the Girawa, Bemal and Sihan languages. This family is located east of the Upper Gogol River system and fills a gap found in Z'graggen 1971a.

2.8.2.2.1.2.3. **The Gum Family** consists of the languages Sihan, Gumalu, Isebe, Amele, Panim and Bau. The family is located in a compact area west of the Lower Gogol River area. Since Panim is a new member of the family, the original name Abaian has been changed to the river name Gum.

2.8.2.2.1.2.4. **The Hanseman Family** consists of nineteen members: Rapting, Wamas, Samosa, Murupi, Saruga, Nake, Mosimo, Garus, Yoidik, Rempi, Bagupi, Silopi, Utu, Mawan, Baimak, Matepi, Gal, Garuh and Kamba. Some of these languages may prove to be only dialects because there appears to be mutual intelligibility among several of these languages, though informants insisted repeatedly that they were different languages. The area was previously more densely populated, as earlier reports of missionaries indicate. See, for instance, Kaspruś' (1942-45) village and language map.

2.8.2.2.2. *THE ADELBERT RANGE SUPER-STOCK*

The Adelbert Range Super-Stock extends from the northern half of Karkar Island across the central part of the Adelbert Range to the Middle Ramu River and across the Upper Ramu River towards Goroka. It consists of six stocks: the Mugil stock-level Isolate, and the Isumrud, Pihom, Josephstaal, Wanang and Brahman Stocks. The Mugil-Isumrud-Pihom languages and the Josephstaal-Wanang languages form lexical subgroups.

2.8.2.2.2.1. The Mugil stock(-level Isolate) (D)

The Mugil stock-level Isolate belongs structurally to the Adelbert Range languages, but it has been lexically heavily influenced by the neighbouring Mabuso and Austronesian languages.

2.8.2.2.2.2. The Isumrud Stock (E)

The Isumrud Stock - named after the Isumrud Strait between Karkar Island and the New Guinea mainland - is located on the northern part of Karkar Island and in the coastal area of the mainland opposite Karkar Island. Though the speakers of Isumrud Stock languages live in a near-coastal area, those on the mainland have no special economic ties with the sea. The stock consists of one family-level isolate: Dimir, and two families: Kowan and Mabuan.

2.8.2.2.2.2.1. **The Dimir family-level Isolate** is located on the mainland. Dimir is characterized by its overt number marking on nouns, which is the only observed instance in the Mugil-Isumrud-Pihom languages.

2.8.2.2.2.2.2. **The Mabuan Family** consists of the Malas and Bunabun languages, both located on the mainland.

2.8.2.2.2.2.3. **The Kowan Family** consists of the languages Waskia and Korak. The Waskia language is located on the northern part of Karkar Island and in Tokain village on the mainland. Korak is spoken on the mainland west of Karkar Island. Both languages prefix the possessive pronoun to nouns denoting a body parts and relationship term which is in contrast to the remainder of the stock.

2.8.2.2.2.3. **The Pihom Stock (F)**

The Pihom Stock - named after one of the highest mountains in the Adelbert Range - extends from the immediate coastal area across the central part of the Adelbert Range towards the upper Gogol River and consists of the Kaukombaran, Kumilan, Tiboran, Omosan, Numagenan and Amaimon families. Z'graggen (1971a) distinguished five families. Further fieldwork in the central part which was at that time still unsurveyed, resulted in some changes and additions: now five families and one family-level isolate (Amaimon) are recognized.

2.8.2.2.2.3.1. **The Kaukombaran Family** consists of four closely related languages: Pay, Pila, Saki and Tani. The languages are named after the word *talk, word* in the vernacular. Some earlier writers refer to those Kaukombaran languages as the Banara or Hatzfeldhafen languages or dialects. The Pay and Pila people are sea-oriented, but the Saki and Tani people are inland people with no special economic interest in the sea.

2.8.2.2.2.3.2. **The Kumilan Family** consists of three languages: Ulingan, Bepour and Moere. Because of new membership the former name Ubean has been changed to Kumilan.

2.8.2.2.2.3.3. **The Tiboran Family** consists of five languages: Kowaki, Mawak, Hinihon, Musar and Wanambre. Because of new membership, the original name Mawamuan has been changed to Tiboran. The originally assumed geographical location of Mawak was found to be in need of correction.

2.8.2.2.2.3.4. **The Omosan Family** consists of two languages: Koguman and Abasakur. This family fills a gap in Z'graggen 1971a.

2.8.2.2.2.3.5. **The Numagenan Family** consists of six languages: Wanuma, Yaben, Yarawata, Bilakura, Parawen and Ukuriguma. Because of new entries, the original name Wayapan has been changed to the river name Numagenan. The linguistic identification of the villages in this area was extremely difficult, and the informants' opinion was not always supported by lexical evidence. This area needs further attention, especially as regards migrations. The language group, except for Wanuma, deviates from the remainder of the stock in that the object marker is, in part, suffixed to the verb root.

2.8.2.2.2.3.6. **The Amaimon family-level Isolate** is located at the southern end of the Pihom Stock in the neighbourhood of the Wanang and Mabuso languages and has been tentatively included in the Pihom Stock.

2.8.2.2.2.4. **The Josephstaal Stock (G)**

The Josephstaal Stock is named after the Patrol Station Josephstaal and located on the southern slopes of the Adelbert Range in the neighbourhood of the Ramu languages. The stock consists of two families: Sikan and Pomoikan, and two family-level isolates: Osum and Wadaginam.

2.8.2.2.2.4.1. **The Sikan Family** consists of the Katiati and Sileibi languages. Sileibi is a new entry, additional to those given in Z'graggen 1971a. In the Sikan languages, the object marking pronoun is not affixed to the verb root.

2.8.2.2.2.4.2. **The Osum family-level Isolate** extends south from Josephstaal Patrol Station towards the Sogeram River. The southern boundaries are still uncertain. Numbers are overtly marked with nouns in it.

2.8.2.2.2.4.3. **The Pomoikan Family** consists of three languages: Pondoma, Ikundun and Moresada. Capell (1952) listed Moresada or Murusapa with the Ramu languages or with his Group III. Structural comparisons support their inclusion with the Adelbert Range and Josephstaal languages. The Pomoikan languages are the only languages with a concordance class system involving nouns and adjectives (see Z'graggen 1971a:118ff.).

2.8.2.2.2.4.4. **The Wadaginam family-level Isolate** is separated from the remainder of the stock by the Goam River and its speakers are at present

socially and economically more associated with the Tangu people. But the structure of the languages of the family links with that of the Josephstaal Stock.

2.8.2.2.2.5. The Wanang Stock (H)

The Wanang Stock - named after the Wanang River - is located north of the Middle Ramu River area and consists of two families: Atan and Emuan, and a family-level isolate: Paynamar. Pronouns are not affixed to the noun or verb roots, except for Paynamar which prefixes the possessive pronoun to some nouns denoting terms for relatives.

2.8.2.2.2.5.1. **The Atan Family** consists of two languages: Atemple and Angaua. Atemple village is now disintegrating. Capell (1952:185ff.) inadvertently put his Anor wordlist under the name Atemple.

2.8.2.2.2.5.2. **The Emuan Family** consists of two languages: Emerum and Musak. Tevari village is geographically separated from the Emerum speaking community.

2.8.2.2.2.5.3. **The Paynamar family-level Isolate** is spoken in just one small hamlet: Paynamar on the Sogeram River.

2.8.2.2.2.6. The Brahman Languages

The Brahman languages - named after the Brahman cattle station - are tentatively regarded as a family and included into the Adelbert Range languages. The Brahman Family consists of the following languages: Isabi (Maruhia), Biyom (Sasimo), Tauya (Inafosa) and Faita. Deibler of the Summer Institute of Linguistics first collected wordlists of three of the Brahman languages. His language names are put in brackets (see above) but they have not been adopted since the present writer's informants were not familiar with them. They are probably clan names. Z'graggen visited the area in May 1973 and collected his own materials. The languages appear to have belonged originally to the Adelbert Range area, though they have each, to a varying degree, been influenced by the Rai Coast and Highlands languages. Faita on the Ramu River has the closest links with the Adelbert Range languages and its mythology links them with the Wanang area. Biyom was originally believed to be linked with the Gende language and the East New Guinea Highlands Stock. The language appears to be tonal. Tauya is spoken in only two villages (Tauya and Kausi) at the foothills of the Bismarck Range. The Isabi speaking people had close social and economic ties with the Gahuku people of the East New Guinea Highlands

Stock. Isabi is heavily influenced by the East New Guinea Highlands Stock languages (Wurm, personal communication) and appears to be tonal.

In all Brahman languages, the possessive and object marking pronouns are prefixed to the stem, which is characteristic of the Adelbert Range languages. The singular pronoun forms are similar to the forms in the Adelbert Range, whereas the plural forms are similar to those found in the Rai Coast languages.

2.8.2.2.3. *OVERALL CLASSIFICATION PROBLEMS*

Claassen and McElhanon (1970:58) classified the Rai Coast and Finisterre languages are being

> in different micro-phyla for a number of reasons. The lexico-statistical relationship is slight and within the range which could be attributed to chance or to the presence of unrecognized loans. The pronominal system differs as also do a number of vocabulary items which are generally stable throughout the Finisterre-Huon Micro-phylum.

The data collected by the present writer appear to support this view.

Wurm (1971:610f.) suggests "the existence of some very distant link" between the languages of his Bogia Phylum and the Central New Guinea Macro-Phylum. This is because of "some sporadic lexical correspondences" and "some typological agreements". Sentence medial verb forms are definitely present in Waskia, Wanuma and Mugil and other languages. Dual number in person is very common in the Madang languages, but rare in the Adelbert Range languages.

In 1970 McElhanon and Voorhoeve proposed their Trans-New Guinea Phylum and Wurm (personal communication) considering the linguistic situation in a wider perspective grouped the Madang-Adelbert Range as a sub-phylum in the Trans-New Guinea Phylum.

However, the present writer finds a comparison of languages with the Trans-New Guinea Phylum material as presented by McElhanon and Voorhoeve a very difficult task indeed. In their publication two formerly separate phyla are brought together and shown to be genetically related. These phyla are the Central and South New Guinea Phylum with 68 members and the Huon-Finisterre Phylum with 72 member languages, i.e. a total of 140 languages. For 25 languages, most of them at the south coast, none of the cognates are given, but they are apparently included on other grounds not presented in this publication, probably those constituted by the recognition of a reasonably close relationship between them and languages included in the comparison. Fifty-three words are presented which are manifested in 93 cognate series. At least twelve roots are of Austronesian origin (see 2.5.4.2.2. in this volume) and some more may not have been discovered yet. About half of the words are manifested in two, three

or four cognate series in free or merged form, e.g. *tongue*, or occurring simultaneously or in complementary distribution in individual languages, e.g. *nose*. Only half the words are found to occur in a single series of cognates, and these are frequently marked with a,b,c,d,x,? indicating unexplained elements which might be parts of an undiscovered root. Twenty-two cognate series are found in less than 5% of the languages compared, with the lowest number 3%, but these languages are widely scattered through the two phyla in most instances. Only ten cognate series are found in more than half of the languages, the highest number being 96 for the word for *I* - these are the pronouns and the words *eye, urine, mother, louse, eat*. The word for *louse* might be culturally conditioned and the word for *mother* might be partly child language. The word for *to eat* is one of the very widespread roots and links also with most of the Rai Coast and Adelbert Range languages. In the writer's opinion, the evidence listed may be inadequate for the postulation and illustration of a genetic relationship in the traditional way. The pronouns in the Madang-Adelbert Range languages differ from those commonly encountered in the Trans-New Guinea languages. Undoubtedly there are some Trans-New Guinea Phylum roots present in the Madang and Adelbert Range languages, but a comparison on wider grounds seems impossible before more material is made available.

2.8.2.3. THE PERSONAL PRONOUNS

In this section, the personal pronouns in their free forms are set out in Table II and subsequently compared with a number of Wurm's pronoun sets in non-Austronesian (or Papuan) languages (see 2.3.3. in this volume). The third person plural pronoun has not been included because of its complexity. Most of the pronoun forms contain a second element, which in most cases could be identified as a number marker, which is marked in Table II by a dash (-). No marking is made if forms are unrecognizably fused or doubtful. Unexplained elements are marked with "x" (not to be confused with Wurm's set x (see 2.3.3.6.) - members of that set occur in Madang-Adelbert Range languages in only some very few instances and are of no importance in them). The figures 1,2,3 etc. placed after the pronouns in Table II indicate to which of Wurm's sets I,II,III etc. (see 2.3.3. in this volume) a particular pronoun belongs.

The first and second persons singular pronoun forms in the MASP languages belong, with only a few exceptions, to set III (see 2.3.3.4. in this volume), whereas those in the majority of the Trans-New Guinea Phylum languages belong to set I (see 2.3.3.2.). In the Madang, Josephstaal, Wanang and Brahman languages the third person singular pronoun forms belong mostly to set III, whereas most of the Isumrud and

Pihom forms belong to set II (see 2.3.3.3.). The assignment of the form u'pa with its labio-velar point of articulation causes some trouble. This form could be assigned to set II or set III. The affixed forms of the possession and object marking forms belong to set I. It is possible that a demonstrative was given instead of the third person singular pronoun, though care was taken to avoid this error. Most of the Trans-New Guinea Phylum forms belong to set I and a few to set III. The first person plural forms belong mostly to set III, but the Josephstaal, Kowan and Numagenan languages, and a few others, belong to set I. The Trans-New Guinea Phylum forms belong to set I. The second person plural forms belong to set I in the Rai Coast languages, except for the Mindjim Family, and in most of the Brahman languages. The rest, with some exceptions, especially among the Wanang languages, belong to set III. The Trans-New Guinea Phylum language forms belong mainly to set I, though possibly a few of them belong to set II. Thus, there is a great difference between the pronoun sets of the Trans-New Guinea Phylum and the MASP languages, but the facts indicate in part a unity of Madang and Adelbert Range languages.

The pronouns have been studied in their free and emphatic forms as well as in their possessive and object marking forms. Space does not allow the inclusion of them all, and in a few cases some additional field enquiry has to be done. But a few notes on the occurrence of structural patterns of the affixed pronouns will be given. The occurrence of the structural patterns is displayed in Table I.

With regard to the expression of a possessive relationship, nouns are frequently divided into two classes (2C1): the class of terms for relatives (R) and parts of body (B), which form together the RB class, and the object class (O). The latter includes all exceptions to the RB class. In a one-possessive class system (1C1) this distinction is not made.

The markers expressing possessive relationship (PM) are immediately prefixed or suffixed to the noun base, but in the Kokon languages a ligative is inserted between them. In some languages, affixes are directly added only to some of the potential members of a class of nouns, with a common exception being the word for *blood*. Some of the noun bases change and the third person singular forms are frequently irregular in the Madang languages.

The prefixing pattern is typical of the Adelbert Range languages, and the suffixing of the Madang languages, but there are exceptions in the Rai Coast languages (see Table I). In some of them, the possessive marker is prefixed only to terms denoting relatives, and in the case of Danaru, only to terms indicating parts of the body. These variations are marked

in Table I by R or B respectively. Some of the Rai Coast and Adelbert Range languages have a 1Cl system. For illustrative material the reader is referred to Z'graggen 1971a:121-42.

In a number of languages the person or number of fillers of the object slot have to be in agreement with the verb, i.e. the object is related to the verb via the object marker (OM). The object marker is prefixed in most of the Adelbert Range languages. However, in the Numugenan languages, except Wanuma, the object marker is suffixed to some of the verbs. In all of the Mabuso languages the object marker is suffixed, as is the case in most of the Rai Coast languages, with the exception of Pulabu. In some of the Rai Coast languages, the OM is prefixed to some of the verbs while it is suffixed to others. For illustrative material see Z'graggen 1971a:159ff.

Table I illustrates the occurrence of the abovementioned structural characteristics. Presence is marked by +, absence by --, a class which includes only body parts by B, and only terms for relatives by R.

TABLE I: STRUCTURAL PATTERNS OF PERSONAL PRONOUNS:
RAI COAST LANGUAGES

LANGUAGE	1Cl	2Cl pref.	2Cl suff.	OM pref.	OM suff.
B1 Sinsauru	+	--	--	--	+
B2 Asas	--	--	+	--	+
B3 Sausi	+	--	--	--	+
B4 Kesawai	+	--	--	--	+
B5 Dumpu	+	--	--	--	+
B6 Arawum	--	R	--	--	+
B7 Kolom	+	--	--	--	+
B8 Suroi	--	--	+	--	+
B9 Lemio	--	R	--	--	+
B10 Pulabu	--	R	--	--	--
B11 Yabong	--	--	+	--	--
B12 Ganglau	+	--	--	--	+
B13 Saep	--	--	+	--	+
B14 Usino	--	--	+	+	+
B15 Sumau	--	--	+	--	+
B16 Urigina	--	--	+	--	+
B17 Danaru	--	R	?	+	+
B18 Usu	--	--	+	+	+
B19 Erima	--	--	+	+	+
B20 Duduela	--	--	+	--	+
B21 Kwato	+	--	--	--	+
B22 Rerau	+	--	--	+	+
B23 Jilim	--	R	--	--	+
B24 Yangulam	+	--	--	--	+
B25 Bom	+	--	--	--	+
B26 Male	+	--	--	--	+
B27 Bongu	+	--	--	--	+
B28 Songum	+	--	--	--	+

TABLE 1 (cont'd)

MABUSO LANGUAGES

	LANGUAGE	1Cl	2Cl pref.	2Cl suff.	OM pref.	OM suff.
C1	Kare	--	--	+	--	+
C2	Girawa	--	--	+	--	+
C3	Munit	--	--	+	--	+
C4	Bemal	--	--	+	--	+
C5	Sihan	--	--	+	--	+
C6	Gumalu	--	--	+	--	+
C7	Isebe	--	--	+	--	+
C8	Amele	--	--	+	--	+
C9	Bau	--	--	+	--	+
C10	Panim	--	--	+	--	+
C11	Rapting	--	--	+	--	+
C12	Wamas	--	--	+	--	+
C13	Samosa	--	--	+	--	+
C14	Murupi	--	--	+	--	+
C15	Saruga	--	--	+	--	+
C16	Nake	--	--	+	--	+
C17	Mosimo	--	--	+	--	+
C18	Garus	--	--	+	--	+
C19	Yoidik	--	--	+	--	+
C20	Rempi	--	--	+	--	+
C21	Bagupi	--	--	+	--	+
C22	Silopi	--	--	+	--	+
C23	Utu	--	--	+	--	+
C24	Mawan	--	--	+	--	+
C25	Baimak	--	--	+	--	+
C26	Matepi	--	--	+	--	+
C27	Gal	--	--	+	--	+
C28	Garuh	--	--	+	--	+
C29	Kamba	--	--	+	--	+

MUGIL-ISUMRUD-PIHOM LANGUAGES

	LANGUAGE	1Cl	2Cl pref.	2Cl suff.	OM pref.	OM suff.
D1	Mugil	--	+	--	+	--
E1	Dimir	+	--	--	+	--
E2	Malas	+	--	--	+	--
E3	Bunabun	+	--	--	+	--
E4	Korak	--	+	--	+	plural*
E5	Waskia	--	+	--	+	--
F1	Pay	--	+	--	+	--
F2	Pila	--	+	--	+	--
F3	Saki	--	+	--	+	--
F4	Tani	--	+	--	+	--
F5	Ulingan	--	R	--	+	--
F6	Bepour	+	--	--	+	--
F7	Moere	+	--	--	+	--
F8	Kowaki	--	+	--	+	--
F9	Mawak	+	--	--	+	--
F10	Hinihon	+	--	--	+	--
F11	Musar	+	--	--	+	--
F12	Wanambre	+	--	--	+	--
F13	Koguman	+	--	--	+	--
F14	Abasakur	+	--	--	+	--
F15	Wanuma	--	R	--	+	plural*
F16	Yaben	--	R	--	+	+
F17	Yarawata	--	R	--	+	+
F18	Bilakura	--	R	--	+	+
F19	Parawen	--	R	--	+	+
F20	Ukuriguma	--	R	--	+	+
F21	Amaimon	+	--	--	--	--

TABLE I (cont'd) **JOSEPHSTAAL-WANANG-BRAHMAN LANGUAGES**

LANGUAGE	1Cl	2Cl pref.	2Cl suff.	OM pref.	OM suff.
G1 Sileibi	+?	--	--	--	--
G2 Katiati	--	R	--	--	--
G3 Osum	--	R	--	+	--
G4 Pondoma	--	R	--	--	--
G5 Ikundun	--	+	--	+	--
G6 Moresada	--	+	--	+	--
G7 Wadaginam	--	+	--	+	--
H1 Atemple	+	--	--	--	--
H2 Angaua	+	--	--	--	--
H3 Emerum	+	--	--	--	--
H4 Musak	+	--	--	--	--
H5 Paynamar	--	R?	--	+	--
I1 Isabi	--	+	--	+	--
I2 Biyom	--	+	--	+	--
I3 Tauya	--	+	--	+	--
I4 Faita	--	+	--	+	--

*"plural" (Mugil-Isumrud-Pihom Languages section of the table) indicates the presence of a single marker denoting plurality of object and not varying for person.

TABLE II: MADANG-ADELBERT RANGE PRONOUNS

PRONOUN: *I*

RAI COAST (A)			MABUSO (A)			MUGIL (B)			JOSEPHSTAAL (B)	
B1	Sinsauru	i: 3	C1	Kare	su 3	D1	Mugil	ya 3	G1 Sileibi	ya 3
B2	Asas	i: 3	C2	Girawa	ita 3				G2 Katiati	yi 3
B3	Sausi	i: 3	C3	Munit	isa 3		ISUMRUD (B)		G3 Osum	yi-g 3
B4	Kesawai	i: 3	C4	Bemal	is 3	E1	Dimir	yi-ŋ 3	G4 Pondoma	yi 3
B5	Dumpu	i: 3	C5	Sihan	isa 3	E2	Malas	i: 3	G5 Ikundun	yi 3
B6	Arawum	yi 3	C6	Gumalu	isa 3	E3	Bunabun	i-ñɛ 3	G6 Moresada	yɛ-g 3
B7	Kolom	i: 3	C7	Isebe	isɛ 3	E4	Korak	ŋa-m 2	G7 Wadaginam	ya-g 3
B8	Suroi	ye 3	C8	Amele	isa 3	E5	Waskia	ani 1		
B9	Lemio	yi 3	C9	Bau	isa 3				WANANG (B)	
B10	Pulabu	di 3	C10	Panim	isɛ 3		PIHOM (B)		H1 Atemple	api R
B11	Yabong	nʌ 1	C11	Rapting	da 3	F1	Pay	ɛ-maka 3	H2 Angaua	nsə x3
B12	Ganglau	na 1	C12	Wamas	sa 3	F2	Pila	yo 3	H3 Emerum	pia R
B13	Saep	nʌ 1	C13	Samosa	sʌ-gɛ 3	F3	Saki	yo 3	H4 Musak	ya 3
B14	Usino	yɛ 3	C14	Murupi	sa 3	F4	Tani	zo 3	H5 Paynamar	sa-wan 3
B15	Sumau	yɛ 3	C15	Saruga	sa-ga 3	F5	Ulingan	yo-s 3		
B16	Urigina	iyɛ 3	C16	Nake	sʌ-g 3	F6	Bepour	iyɛ 3	BRAHMAN (B)	
B17	Danaru	i: 3	C17	Mosimo	sʌ 3	F7	Moere	ɛ-nɛ 3	I1 Isabi	na(na) 1
B18	Usu	ja 3	C18	Garus	dɛ 3	F8	Kowaki	yɛ 3	I2 Biyom	ya 3
B19	Erima	ji 3	C19	Yoidik	dʌ-ʔ 3	F9	Mawak	yɛ 3	I3 Tauya	ya 3
B20	Duduela	yɛ 3	C20	Rempi	dʌ 3	F10	Hinihon	yɛ 3	I4 Faita	ya 3
B21	Kwato	ji 3	C21	Bagupi	sɛ-g 3	F11	Musar	yɛ 3		
B22	Rerau	yi 3	C22	Silopi	sɛ-g 3	F12	Wanambre	yɛ 3		
B23	Jilim	yi 3	C23	Utu	sɛ-k 3	F13	Koguman	ɛ-ŋ 3		
B24	Yangulam	yɛm 3+R	C24	Mawan	ha-g 3	F14	Abasakur	ŋa-ŋ 2		
B25	Bom	ɛ: 3	C25	Baimak	sa-k 3	F15	Wanuma	yɛ 3		
B26	Male	ǰa 3	C26	Matepi	sɛ-g 3	F16	Yaben	yɛ 3		
B27	Bongu	aji x3	C27	Gal	sʌ 3	F17	Yarawata	ya-na 3		
B28	Songum	sʌ 3	C28	Garuh	da 3	F18	Bilakura	ya-na 3		
			C29	Kamba	da 3	F19	Parawen	ya-na 3		
						F20	Ukuriguma	ɛ-na 3		
						F21	Amaimon	ɛ-ŋi 3		

(A) = MADANG SUPER-STOCK, (B) = ADELBERT RANGE SUPER-STOCK

TABLE II (cont'd)

PRONOUN: *thou*

RAI COAST (A)		MABUSO (A)		MUGIL (B)		JOSEPHSTAAL (B)	
B1 Sinsauru	nɛ 3	C1 Kare	nu 3	D1 Mugil	ni 3	G1 Sileibi	na 3
B2 Asas	nɛ 3	C2 Girawa	nʌ 3			G2 Katiati	na 3
B3 Sausi	nɛ 3	C3 Munit	na 3	ISUMRUD (B)		G3 Osum	na-gə 3
B4 Kesawai	nɛ 3	C4 Bemal	na 3	E1 Dimir	nɛ-ŋ 3	G4 Pondoma	na 3
B5 Dumpu	ne 3	C5 Sihan	ina 3	E2 Malas	nɛ 3	G5 Ikundun	na 3
B6 Arawum	ne 3	C6 Gumalu	ina 3	E3 Bunabun	nɛ-nɛ 3	G6 Moresada	na-ɡ 3
B7 Kolom	nʌ 3	C7 Isebe	inɛ 3	E4 Korak	ni-m 3	G7 Wadaginam	na-ɡ 3
B8 Suroi	ne 3	C8 Amele	ina 3	E5 Waskia	ni 3		
B9 Lemio	nɛ 3	C9 Bau	ina 3			WANANG (B)	
B10 Pulabu	ne 3	C10 Panim	inɛ 3	PIHOM (B)		H1 Atemple	ambə 2x
B11 Yabong	nom 3+2	C11 Rapting	na-g 3	F1 Pay	na-maka 3	H2 Angaua	am 2
B12 Ganglau	ma 2	C12 Wamas	na-gɛ 3	F2 Pila	no 3	H3 Emerum	nama 3+2
B13 Saep	nʌma 3+2	C13 Samosa	nʌ-gɛ 3	F3 Saki	no 3	H4 Musak	na 3
B14 Usino	nʌ 3	C14 Murupi	na-ga 3	F4 Tani	no 3	H5 Paynamar	ama-wan 2
B15 Sumau	nɛ 3	C15 Saruga	nʌ-ga 3	F5 Ulingan	no-s 3		
B16 Urigina	nɛ 3	C16 Nake	nʌ-g 3	F6 Bepour	nɛ 3	BRAHMAN (B)	
B17 Danaru	ne 3	C17 Mosimo	nʌ-gɛ 3	F7 Moere	nɛ-nɛ 3	I1 Isabi	kia 1
B18 Usu	na 3	C18 Garus	nɛ-g 3	F8 Kowaki	nɛ 3	I2 Biyom	na 3
B19 Erima	nɛ 3	C19 Yoidik	nʌ-g 3	F9 Mawak	nɛ 3	I3 Tauya	na 3
B20 Duduela	nɛ 3	C20 Rempi	nʌ-k 3	F10 Hinihon	nɛ 3	I4 Faita	na 3
B21 Kwato	ni 3	C21 Bagupi	nɛ-g 3	F11 Musar	nɛ 3		
B22 Rerau	ni 3	C22 Silopi	nɛ-g 3	F12 Wanambre	nɛ 3		
B23 Jilim	ni 3	C23 Utu	nɛ-k 3	F13 Koguman	no-ŋ 3		
B24 Yangulam	ni 3	C24 Mawan	na-k 3	F14 Abasakur	nu 3		
B25 Bom	ni 3	B25 Baimak	na-k 3	F15 Wanuma	nɛ 3		
B26 Male	ni 3	C26 Matepi	nɛ-g 3	F16 Yaben	nɛ 3		
B27 Bongu	ni 3	C27 Gal	na 3	F17 Yarawata	na-na 3		
B28 Songum	ñi 3	C28 Garuh	na 3	F18 Bilakura	na-na 3		
		C29 Kamba	na 3	F19 Parawen	na-na 3		
				F20 Ukuriguma	nɛ-na 3		
				F21 Amaimon	nɛ-ŋi 3		

(A) = MADANG SUPER-STOCK, (B) = ADELBERT RANGE SUPER-STOCK

TABLE II (cont'd)

PRONOUN: *he*

RAI COAST (A)			MABUSO (A)			MUGIL (B)			JOSEPHSTAAL (B)	
B1	Sinsauru	nu 3	C1	Kare	noŋga 3+1	D1	Mugil	in 3	G1 Sileibi	niŋa 3+1?
B2	Asas	nɛnɛ 3x	C2	Girawa	ɛ?i 1				G2 Katiati	nu 3
B3	Sausi	nu 3	C3	Munit	ugɛ 1		ISUMRUD (B)		G3 Osum	ni-gə 3
B4	Kesawai	ni 3	C4	Bemal	guɛ 1x	E1	Dimir	wu-ŋ 2	G4 Pondoma	nu 3
B5	Dumpu	nu 3	C5	Sihan	u?pa 3?2?	E2	Malas	u 2	G5 Ikundun	niŋ 3+1?
B6	Arawum	nu 3	C6	Gumalu	u?pa 3?2?	E3	Bunabun	o-no 2	G6 Moresada	nə-g 3
B7	Kolom	no 3	C7	Isebe	u?po 3?2?	E4	Korak	nu-m 3	G7 Wadaginam	ni-g 3
B8	Suroi	nu 3	C8	Amele	u?pa 3?2?	E5	Waskia	nu 3		
B9	Lemio	nu 3	C9	Bau	u?pa 3?2?				WANANG (B)	
B10	Pulabu	no 3	C10	Panim	u?po 3?2?		PIHOM (B)		H1 Atemple	naŋgə 3+1?
B11	Yabong	nuŋ 3+1	C11	Rapting	nu-g 3	F1	Pay	a-maka ?	H2 Angaua	mbə 2
B12	Ganglau	ŋgu 1	C12	Wamas	nu-go 3	F2	Pila	o 2	H3 Emerum	naŋga 3+1?
B13	Saep	naŋgo 3+1	C13	Samcsa	nu-go 3	F3	Saki	wo 2	H4 Musak	nu 3
B14	Usino	nu 3	C14	Murupi	nu-ga 3	F4	Tani	o 2	H5 Paynamar	mba 2
B15	Sumau	nu 3	C15	Saruga	nu-ga 3	F5	Ulingan	o-s 2		
B16	Urigina	no 3	C16	Nake	nu-g 3	F6	Bepour	wo 2	BRAHMAN (B)	
B17	Danaru	nu 3	C17	Mosimo	nu-go 3	F7	Moere	o-no 2	I1 Isabi	agɛa lx,ono 2+3
B18	Usu	no 3	C18	Garus	nu-g 3	F8	Kowaki	wo 2		
B19	Erima	no 3	C19	Yoidik	won 2+3	F9	Mawak	o 2	I2 Biyom	ni 3
B20	Duduela	no 3	C20	Rempi	nu-k 3	F10	Hinihon	ɛyɛ 1	I3 Tauya	ni 3
B21	Kwato	nu 3	C21	Bagupi	nu-g 3	F11	Musar	wo 2	I4 Faita	ni 3
B22	Rerau	nu 3	C22	Silopi	nu-g 3	F12	Wanambre	wu-on 2		
B23	Jilim	no 3	C23	Utu	nu-k 3	F13	Koguman	o-ŋ 2		
B24	Yangulam	no 3	C24	Mawan	nu-k 3	F14	Abasakur	no 3		
B25	Bom	ʌ 1?	C25	Baimak	nu-k 3	F15	Wanuma	wo 2		
B26	Male	ʌro 1	C26	Matepi	nu-g 3	F16	Yaben	wua 2x		
B27	Bongu	andu 1	C27	Gal	nu-g 3	F17	Yarawata	wa-na 2		
B28	Songum	ʌdu 1	C28	Garuh	nu-g 3	F18	Bilakura	wo 2		
			C29	Kamba	nu-g 3	F19	Parawen	wa-na 2		
						F20	Ukuriguma	wo-no 2		
						F21	Amaimon	o-ŋu 2		

(A) = MADANG SUPER-STOCK, (B) = ADELBERT RANGE SUPER-STOCK

TABLE II (cont'd)

PRONOUN: *we* (yig or cognate: incl., ga or cognate: excl.)

RAI COAST (A)		
B1	Sinsauru	sɛ-nɛ 3
B2	Asas	sɛ-nɛ 3
B3	Sausi	sɛ-nɛ 3
B4	Kesawai	sɛ-nɛ 3
B5	Dumpu	si 3
B6	Arawum	si-ne 3
B7	Kolom	si-n 3
B8	Suroi	si-ne 3
B9	Lemio	s-ne 3
B10	Pulabu	ige 3
B11	Yabong	si-ŋ 3
B12	Ganglau	si-ga 3x
B13	Saep	si-ga 3
B14	Usino	si-n 3
B15	Sumau	si-ni 3
B16	Urigina	sɛ-nɛ 3
B17	Danaru	sɛ-n 3
B18	Usu	hi-n 3
B19	Erima	ɛ-rɛ 3
B20	Duduela	si-f̃ɛ 3
B21	Kwato	si-ni 3
B22	Rerau	si-ni 3
B23	Jilim	si-gi 3
B24	Yangulam	se-nɛ 3
B25	Bom	igʌ 3
B26	Male	gʌ 3
B27	Bongu	yig x3
B28	Songum	gʌ 3

MABUSO (A)		
C1	Kare	ža 3
C2	Girawa	iʔɛ 3
C3	Munit	igɛ 3
C4	Bemal	ig 3
C5	Sihan	ikɛ 3
C6	Gumalu	igɛ 3
C7	Isebe	igɛ 3
C8	Amele	ɛkɛ 3
C9	Bau	ikɛ 3
C10	Panim	igɛ 3
C11	Rapting	ik 3
C12	Wamas	žogo x3
C13	Samosa	zogo x3
C14	Murupi	iga 3
C15	Saruga	iga 3
C16	Nake	ig 3
C17	Mosimo	žogo x3
C18	Garus	ig 3
C19	Yoidik	yit x3
C20	Rempi	it 3
C21	Bagupi	ig 3
C22	Silopi	ig 3
C23	Utu	ik 3
C24	Mawan	ik 3
C25	Baimak	ik 3
C26	Matepi	ig 3
C27	Gal	ig 3
C28	Garuh	ig 3
C29	Kamba	ig 3

MUGIL (B)		
D1	Mugil	iy 3

ISUMRUD (B)		
E1	Dimir	yi-n 3
E2	Malas	i-n 3
E3	Bunabun	i-ño 3
E4	Korak	ani-mtaŋ 1
E5	Waskia	a-na 1?

PIHOM (B)		
F1	Pay	i-maka 3
F2	Pila	ik 3
F3	Saki	i 3
F4	Tani	zi 3
F5	Ulingan	i(s) 3
F6	Bepour	i 3
F7	Moere	i-kiɛ 3x
F8	Kowaki	i-ʔɛ 3
F9	Mawak	i-kɛ 3
F10	Hinihon	i-kɛ 3
F11	Musar	yi-k 3
F12	Wanambre	yi-k 3
F13	Koguman	i-g 3
F14	Abasakur	ga-g 3
F15	Wanuma	in 1
F16	Yaben	in 1
F17	Yarawata	ina-na 1
F18	Bilakura	ɛñi-na 1
F19	Parawen	ina-na 1
F20	Ukuriguma	ino 1
F21	Amaimon	ini-ŋi 1

JOSEPHSTAAL (B)		
G1	Sileibi	a-ra 1
G2	Katiati	a-ra 1
G3	Osum	a-ŋ 1
G4	Pondoma	a-ŋ 1
G5	Ikundun	a-ŋ 1
G6	Moresada	a-ŋəg 1
G7	Wadaginam	ga-ŋ 3

WANANG (B)		
H1	Atemple	arugu 1x
H2	Angaua	arə 1x
H3	Emerum	a-raŋ 1
H4	Musak	a-rɨ 31
H5	Paynamar	a-ra 31

BRAHMAN (B)		
I1	Isabi	tara 3x
I2	Biyom	sina 3x
I3	Tauya	si(ni) 3x
I4	Faita	a-nɨ 1

(A) = MADANG SUPER-STOCK, (B) = ADELBERT RANGE SUPER-STOCK

TABLE 11 (cont'd)

PRONOUN: *ye*

RAI COAST (A)			MABUSO (A)			MUGIL (B)			JOSEPHSTAAL (B)		
B1	Sinsauru	neye 3	C1	Kare	wu 2	D1	Mugil	ne 3	G1	Sileibi	na-ra 3
B2	Asas	tɛ-nɛ 1	C2	Girawa	ʌʔʌ 3				G2	Katiati	na-ra 3
B3	Sausi	tɛ-nɛ 1	C3	Munit	agɛ 3		ISUMRUD (B)		G3	Osum	na-ŋ 3
B4	Kesawai	tɛ-nɛ 1	C4	Bemal	ʌg 3	E1	Dimir	nɛ-n 3	G4	Pondoma	na-ŋ 3
B5	Dumpu	se 1	C5	Sihan	ʌke 3	E2	Malas	na-n 3	G5	Ikundun	na-ŋ 3
B6	Arawum	ta-ne 1	C6	Gumalu	agɛ 3	E3	Bunabun	a-nɛ 3	G6	Moresada	na-ŋəg 3
B7	Kolom	tʌ-ne 1	C7	Isebe	ʌgɛ 3	E4	Korak	ni-mtaŋ 3	G7	Wadaginam	na-ŋ 3
B8	Suroi	ta-ne 1	C8	Amele	akɛ 3	E5	Waskia	ni-na 3			
B9	Lemio	tʌ-ne 1	C9	Bau	akɛ 3					WANANG (B)	
B10	Pulabu	ge 1?	C10	Panim	ʌgɛ 3		PIHOM (B)		H1	Atemple	ambə 2
B11	Yabong	nɔ-ŋ 3	C11	Rapting	ak 3	F1	Pay	ni-maka 3	H2	Angaua	am 2
B12	Ganglau	ŋga 1?	C12	Wamas	ʌgɛ 3	F2	Pila	nai 3x	H3	Emerum	nam-araŋ 3+2
B13	Saep	naŋga 3	C13	Samosɛ	ʌge 3	F3	Saki	nai 3x	H4	Musak	na-rɨ 3
B14	Usino	ni-n 3	C14	Murupi	aga 3	F4	Tani	ni 3	H5	Paynamar	na-ra 3
B15	Sumau	ti-ni 1	C15	Saruga	ʌga 3	F5	Ulingan	ni 3			
B16	Urigina	to-no 1	C16	Nake	ʌg 3	F6	Bepour	ni 3		BRAHMAN (B)	
B17	Danaru	tɛ-n 1	C17	Mosimo	ʌgɛ 3	F7	Moere	niʔ 3	I1	Isabi	ti(ŋgara) 1
B18	Usu	tɛ-n 1	C18	Garus	ɛg 3	F8	Kowaki	ni-ʔɛ 3	I2	Biyom	si 1
B19	Erima	tɛ-rɛ 1	C19	Yoidik	ʌg 3	F9	Mawak	ni-ŋgɛ 3	I3	Tauya	ti(ni) 1
B20	Duduela	tɛ-f̃ɛ 1	C20	Rempi	hʌk x3	F10	Hinihon	ni-ŋgɛ 3	I4	Faita	nanɨ 3
B21	Kwato	si-li 1	C21	Bagupi	ɛg 3	F11	Musar	ni-k 3			
B22	Rerau	ta-ni 1	C22	Silopi	ɛg 3	F12	Wanambre	ni-k 3			
B23	Jilim	ti-gi 1	C23	Utu	ɛk 3	F13	Koguman	yo-g 1			
B24	Yangulam	ta-nɛ 1	C24	Mawan	ak 3	F14	Abasakur	no-ŋot 3			
B25	Bom	niŋgi 3	C25	Baimak	ak 3	F15	Wanuma	an 3			
B26	Male	niŋga 3	C26	Matepi	ɛg 3	F16	Yaben	an 3			
B27	Bongu	niji 3	C27	Gal	ʌg 3	F17	Yarawata	ana-na 3			
B28	Songum	ñiŋga 3	C28	Garuh	ʌg 3	F18	Bilakura	añi-na 3			
			C29	Kamba	ag 3	F19	Parawen	ai-na 3			
						F20	Ukuriguma	ani 3			
						F21	Amaimon	ani-ŋi 3			

(A) = MADANG SUPER-STOCK, (B) = ADELBERT RANGE SUPER-STOCK

2.8.2.4. COMPARATIVE WORDLIST

In the following section a comparative wordlist of eight items will be given for illustration. Only brief comments will be made on the words, and they will be compared with the Trans-New Guinea Phylum languages and the Austronesian languages. Space does not allow the inclusion of more items, and these have been selected because of their comparability with the Trans-New Guinea Phylum languages and Wurm's proto-forms (see 2.4.1.5.5. in this volume). Cognate series (S) are marked with numerals, and subsets with some common phonetic features by letters. Unexplained elements are marked with an x and residues which are found only in very few instances are marked with R. The cognate series were identified with the help of Wurm's Trans-New Guinea Phylum proto-sound system (see 2.4.1. in this volume). In doubtful cases, the geographical location of the languages to which given words belonged was also taken into account.

A number of cognate series occur as free forms or as constituents of a combined form. Examples from the Trans-New Guinea Phylum languages are the words: *eye, tongue, hair, head, knee*. One can rightly assume that the combined, fuller form is the proto-form from which different elements have broken off in the course of development. The nature of the break-away process is obvious in many cases. On the other hand, one has also to take into account the possibility of the joining of two previously independent roots. For instance, the form ŋamge *eye* (Bongu) is such an example. A consonant sequence m+g indicates a morpheme boundary in Bongu. Thus, from the morpheme structure, one may assume the presence of two roots instead of one. In addition, the words for *tongue* and *head* in the Trans-New Guinea Phylum vocabulary (see McElhanon and Voorhoeve 1970) are in fact combinations of an Austronesian with a Trans-New Guinea Phylum root. The Austronesian proto-form has, of course, been adopted according to Trans-New Guinea Phylum rules. For these reasons the present writer has hesitated to trace some of the cognate series back to one origin. For inspection, some data are given in Table III.

TABLE III: MADANG-ADELBERT RANGE WORDLIST

WORD: *arm*

RAI COAST (A)			MABUSO (A)			MUGIL (B)			JOSEPHSTAAL (B)		
B1	Sinsauru	wabi 3	C1	Kare	pɛ 2	D1	Mugil	bɛn 2	G1	Sileibi	kuma 4
B2	Asas	wabi 3	C2	Girawa	ipo 2				G2	Katiati	kuma 4
B3	Sausi	wapi 3	C3	Munit	barʌ 2		ISUMRUD (B)		G3	Osum	epɨnamo 2
B4	Kesawai	wapi 3	C4	Bemal	ɛbɛ 2	E1	Dimir	abɛn 2	G4	Pondoma	umbu-ŋgʊr 4
B5	Dumpu	pʌ 3	C5	Sihan	ɛbɛ 2	E2	Malas	imbɛn 2	G5	Ikundun	gumbu-ŋgʊr 4
B6	Arawum	wambi 3	C6	Gumalu	dɛpɛ 2	E3	Bunabun	ombɛn 2	G6	Moresada	gombo-gəʔ 4
B7	Kolom	kulʌ 1	C7	Isebe	ɛbɛ 2	E4	Korak	ɛrɛ 1	G7	Wadaginam	umbɨ- 4
B8	Suroi	wai 3	C8	Amele	ɛpɛ 2	E5	Waskia	kutiŋ 1			
B9	Lemio	wʌmpi 3	C9	Bau	ɛbɛ 2					WANANG (B)	
B10	Pulabu	yobu 2	C10	Panim	ɛbɛ 2		PIHOM (B)		H1	Atemple	ŋañe R
B11	Yabong	ʌmɔ 3?	C11	Rapting	awɛ 2	F1	Pay	ba 2	H2	Angaua	uman 4
B12	Ganglau	wam 3	C12	Wamas	avɛ 2	F2	Pila	ombo 2	H3	Emerum	kuman 4
B13	Saep	wam 3	C13	Samosa	avɛ 2	F3	Saki	ɛmɛ 2	H4	Musak	kumob 4x
B14	Usion	kubo 4	C14	Murupi	ava 2	F4	Tani	wapo x2	H5	Paynamar	brʌm 2x
B15	Sumau	ubu 4	C15	Saruga	avi 2	F5	Ulingan	wapɛna x2			
B16	Urigina	kombɛ 4	C16	Nake	ivu 2	F6	Bepour	wapɛn x2		BRAHMAN (B)	
B17	Danaru	gomp 4	C17	Mosimo	abi 2	F7	Moere	ampɛn 2	I1	Isabi	ambia 2
B18	Usu	ubɛ 4	C18	Garus	ive 2	F8	Kowaki	ʌpɛ 2	I2	Biyom	ukubu R
B19	Erima	owo 4	C19	Yoidik	abe 2	F9	Mawak	apɛ 2	I3	Tauya	ʔimo 4
B20	Duduela	wɛ 4	C20	Rempi	avɛ 2	F10	Hinihon	apɛ 2	I4	Faita	koma 4
B21	Kwato	upi 4	C21	Bagupi	ɛbɛ 2	F11	Musar	ɛmbɛ 2			
B22	Rerau	kambiŋ 4	C22	Silopi	dɛwu 2	F12	Wanambre	apɛ 2			
B23	Jilim	kabeŋ 4	C23	Utu	zɛvu 2	F13	Koguman	abugum 2+4			
B24	Yangulam	njei 1?	C24	Mawan	debu 2	F14	Abasakur	ɔkʌk 1			
B25	Bom	baŋ 2	C25	Baimak	rɛbu 2	F15	Wanuma	ubɛn 2			
B26	Male	bʌr̃ 2	C26	Matepi	lɛvu 2	F16	Yaben	ubatu 2			
B27	Bongu	iboŋ 2	C27	Gal	ɛwiu 2	F17	Yarawata	ubata 2			
B28	Songum	bʌr̃ 2	C28	Garuh	ebɛ 2	F18	Bilakura	uban 2			
			C29	Kamba	ɛwɛ 2	F19	Parawen	ubutʌ 2			
						F20	Ukuriguma	ubɔn 2			
						F21	Amaimon	bene 2			

(A) = MADANG SUPER-STOCK, (B) = ADELBERT RANGE SUPER-STOCK

TABLE III (cont'd)

WORD: *eye*

	RAI COAST (A)	
B1	Sinsauru	ʌmu 1
B2	Asas	amu 1
B3	Sausi	ami 1
B4	Kesawai	ami 1
B5	Dumpu	yɛm 1
B6	Arawum	ʌm 1
B7	Kolom	ʌm 1
B8	Suroi	am 1
B9	Lemio	aŋuʌm la
B10	Pulabu	amu 1
B11	Yabong	amʌ 1
B12	Ganglau	amu 1
B13	Saep	aman 1
B14	Usino	ogo 2
B15	Sumau	ɛki 2
B16	Urigina	ʌŋki 2
B17	Danaru	aŋg 2
B18	Usu	ɛgɛ 2
B19	Erima	age 2
B20	Duduela	agi 2
B21	Kwato	agemu 2+la
B22	Rerau	aŋgim la
B23	Jilim	agim la
B24	Yangulam	ŋam 1
B25	Bom	ŋam 1
B26	Male	ŋam 1
B27	Bongu	ŋam-ge 1+2
B28	Songum	ñam-ge 1+2

	MABUSO (A)	
C1	Kare	omo 1
C2	Girawa	amɛ 1
C3	Munit	amɛ 1
C4	Bemal	amɛ 1
C5	Sihan	amɛ 1
C6	Gumalu	amɛ 1
C7	Isebe	amɛ 1
C8	Amele	amɛ 1
C9	Bau	amɛ 1
C10	Panim	amə 1
C11	Rapting	amɛ 1
C12	Wamas	ami 1
C13	Samosa	amɛ 1
C14	Murupi	ama 1
C15	Saruga	amu 1
C16	Nake	amu 1
C17	Mosimo	amu 1
C18	Garus	amɛ 1
C19	Yoidik	ama 1
C20	Rempi	ama 1
C21	Bagupi	amu 1
C22	Silopi	amu 1
C23	Utu	amu 1
C24	Mawan	amu 1
C25	Baimak	ʌmu 1
C26	Matepi	amu 1
C27	Gal	amu 1
C28	Garuh	amɛ 1
C29	Kamba	amɛ 1

	MUGIL (B)	
D1	Mugil	mɛ 3

	ISUMRUD (B)	
E1	Dimir	mɛk-mɛt 3
E2	Malas	musaŋ 3a
E3	Bunabun	moaŋ-sik 3+4
E4	Korak	miniˑ-kaŋ 3+4
E5	Waskia	motam 3x

	PIHOM (B)	
F1	Pay	mutak 3a
F2	Pila	mundoa 3
F3	Saki	munda 3
F4	Tani	muda 3
F5	Ulingan	mokokʌ 3a
F6	Bepour	musʔi 3+4
F7	Moere	monsi 3+4
F8	Kowaki	hʌruhʌ 5
F9	Mawak	ʌruhʌ 5
F10	Hinihon	ɛlɛha 5
F11	Musar	mundʌ-ŋgumu 3+la
F12	Wanambre	mundu 3
F13	Koguman	musom 3x
F14	Abasakur	musak 3
F15	Wanuma	mʌg 3
F16	Yaben	magiñɔ 3a
F17	Yarawata	makita 3a
F18	Bilakura	muɔg 3x
F19	Parawen	makita 3a
F20	Ukuriguma	mʌg 3
F21	Amaimon	mɔmɔ R

	JOSEPHSTAAL (B)	
G1	Sileibi	tar-ma 4ʔ+3
G2	Katiati	tam-ga 1+2
G3	Osum	gʌm-uŋgʌ 1+2
G4	Pondoma	aŋgum la
G5	Ikundun	ŋgum la
G6	Moresada	ŋgumun lax
G7	Wadaginam	niŋg- R

	WANANG (B)	
H1	Atemple	ambrʌ-mɑn 6+3
H2	Angaua	ampˑin 6
H3	Emerum	tʌ:m-ga 1+2
H4	Musak	ta:mˑ 1
H5	Paynamar	amˑ 1

	BRAHMAN (B)	
I1	Isabi	kusa 4
I2	Biyom	ʌti 4
I3	Tauya	naʔɛ R
I4	Faita	tʌmʌ 1

(A) = MADANG SUPER-STOCK, (B) = ADELBERT RANGE SUPER-STOCK

TABLE III (cont'd)

WORD: *skin*

RAI COAST (A)			MABUSO (A)			MUGIL (B)			JOSEPHSTAAL (B)		
B1	Sinsauru	mɛtɛ 1	C1	Kare	dʌru 2x	D1	Mugil	san 2?	G1	Sileibi	sɨŋgɨt 4+2
B2	Asas	medɛ 1	C2	Girawa	ʔɛru 2				G2	Katiati	pʊsa 1
B3	Sausi	mɛtɛ 1	C3	Munit	gɛra 2	PIHOM (B)			G3	Osum	wʊsa 1
B4	Kesawai	mɛtɛ 1	C4	Bemal	gala 2	E1	Dimir	goŋ-maŋ R	G4	Pondoma	wəsa 1
B5	Dumpu	midi 1	C5	Sihan	kana 2	E2	Malas	gunu 2	G5	Ikundun	wʊt- 1
B6	Arawum	njal 2x	C6	Gumalu	ganau 2	E3	Bunabun	kʌr 2	G6	Moresada	moŋʌk R
B7	Kolom	mande 1	C7	Isebe	gʌna 2	E4	Korak	kim 2x	G7	Wadaginam	sowaŋgə- R
B8	Suroi	ŋgaro 1	C8	Amele	tɛwɛn R	E5	Waskia	goaŋ R			
B9	Lemio	gɛr̃ 2	C9	Bau	kana 2				WANANG (B)		
B10	Pulabu	cinaway R	C10	Panim	gana 2	PIHOM (B)			H1	Atemple	far 1
B11	Yabong	gotoŋ 1	C11	Rapting	gara 2	F1	Pay	ŋar 2	H2	Angaua	yupɨr xl
B12	Ganglau	gulam 2	C12	Wamas	gara 2	F2	Pila	ndia 4	H3	Emerum	sʊŋgʊtʊ 4+2
B13	Saep	gelʌŋ 2	C13	Samosa	gare 2	F3	Saki	dia 4	H4	Musak	kʊrʊbu 2+x
B14	Usino	mubo 3	C14	Murupi	garaw 2	F4	Tani	ukə 3	H5	Paynamar	wusʌ 1
B15	Sumau	mubu 3	C15	Saruga	gara 2	F5	Ulingan	kanɛma 2x			
B16	Urigina	mɛmbɛ 3	C16	Nake	gara 2,fɛ 1	F6	Bepour	hanʌ 2x	BRAHMAN (B)		
B17	Danaru	ŋgurʌrif 2+R	C17	Mosimo	gara 2	F7	Moere	kʌr 2	I1	Isabi	itʌ 1
B18	Usu	gijʌ 2	C18	Garus	gaɪɛ 2	F8	Kowaki	fuʔu 3	I2	Biyom	uŋg-wiya 3+1
B19	Erima	kokola R+2	C19	Yoidik	sʌ 2?	F9	Mawak	fuku 3	I3	Tauya	wʌrɛ 1
B20	Duduela	kana 2	C20	Rempi	gʌr̃a 2	F10	Hinihon	fuk 3	I4	Faita	saŋga 2
B21	Kwato	kaukana R+2	C21	Bagupi	garʌ 2	F11	Musar	huku 3			
B22	Rerau	mujugum R	C22	Silopi	keri 2,fɛ 1	F12	Wanambre	uku 3			
B23	Jilim	kom R	C23	Utu	gara 2,fɛ 1	F13	Koguman	ogu 3			
B24	Yangulam	jelam 2	C24	Mawan	gari 2	F14	Abasakur	gugu R			
B25	Bom	gaɾ̃a 2	C25	Baimak	gara 2,fɛru 1	F15	Wanuma	goʌn 2a			
B26	Male	ko 2x	C26	Matepi	garɛ 2	F16	Yaben	guʌnu 2a			
B27	Bongu	garu 2	C27	Gal	gari 2,fɛri 1	F17	Yarawata	guana 2a			
B28	Songum	ʔo 2x	C28	Garuh	gaɾ̃a 2	F18	Bilakura	guan 2a			
			C29	Kamba	gonɛ 2	F19	Parawen	goʌna 2a			
						F20	Ukuriguma	guʌn 2a			
						F21	Amaimon	mura 1			

(A) = MADANG SUPER-STOCK, (B) = ADELBERT RANGE SUPER-STOCK

TABLE III (cont'd)

WORD: *ear*

	RAI COAST (A)	
B1	Sinsauru	hʌgu 1
B2	Asas	hagu 1
B3	Sausi	kaɸɛrɛ 2
B4	Kesawai	ahɛlɛ 2
B5	Dumpu	kur 1
B6	Arawum	kabluwaŋɛ R
B7	Kolom	kuŋgulʌ 1
B8	Suroi	lilba 1
B9	Lemio	kʌŋgu 1
B10	Pulabu	habna R
B11	Yabong	sidɛ R
B12	Ganglau	ib 1?
B13	Saep	yɛb 1?
B14	Usino	kagub 1
B15	Sumau	ʌkwu 1
B16	Urigina	ʌŋgu 1
B17	Danaru	gaŋgu 1
B18	Usu	ogu 1
B19	Erima	age 1
B20	Duduela	ag 1
B21	Kwato	agiřaw 1+3?
B22	Rerau	kaŋ-sap 1+?
B23	Jilim	kasab 1
B24	Yangulam	alam 1
B25	Bom	dap 3
B26	Male	damui 3
B27	Bongu	dab 3
B28	Songum	damoy 3

	MABUSO (A)	
C1	Kare	domb 3
C2	Girawa	dau 3
C3	Munit	dahi 3
C4	Bemal	dabu 3
C5	Sihan	dai 3
C6	Gumalu	tahi 3
C7	Isebe	dahi 3
C8	Amele	tahi 3
C9	Bau	tahi 3
C10	Panim	dahi 3
C11	Rapting	dɛwu 3
C12	Wamas	dav 3
C13	Samosa	davɛ 3
C14	Murupi	daw 3
C15	Saruga	dah 3
C16	Nake	dahu 3
C17	Mosimo	davi 3
C18	Garus	divu 3
C19	Yoidik	debu 3
C20	Rempi	dewu 3
C21	Bagupi	dahu 3
C22	Silopi	dahu 3
C23	Utu	dau 3
C24	Mawan	dahu 3
C25	Baimak	tafu 3
C26	Matepi	dah 3
C27	Gal	dahu 3
C28	Garuh	dau 3
C29	Kamba	dau 3

	MUGIL (B)	
D1	Mugil	deksan R

	ISUMRUD (B)	
E1	Dimir	saŋkɛn R
E2	Malas	indɔn 4
E3	Bunabun	induan 4
E4	Korak	diwaŋ 2
E5	Waskia	dogowa R

	PIHOM (B)	
F1	Pay	suat 2
F2	Pila	nduʌt 2
F3	Saki	duwat 2
F4	Tani	tiwa 2
F5	Ulingan	ifana 2
F6	Bepour	ifʌn 2
F7	Moere	iwan 2
F8	Kowaki	imʌmɛnt 5
F9	Mawak	iwamɛnt 5
F10	Hinihon	pika 6
F11	Musar	imʌmɛn 5
F12	Wanambre	damɛn 2
F13	Koguman	atʌ:ndum 5
F14	Abasakur	pi:ga 6
F15	Wanuma	i:rugos 7
F16	Yaben	irʌsilu 7
F17	Yarawata	kowʌnia 1+2
F18	Bilakura	edasilu 7
F19	Parawen	kʌgwʌ:ni 1+2
F20	Ukuriguma	kauni 1+2
F21	Amaimon	zual 7x

	JOSEPHSTAAL (B)	
G1	Sileibi	kɨnzɨŋa 1+x
G2	Katiati	kɯnsigi 1+x
G3	Osum	kowu 52
G4	Pondoma	ginsɛgiw 1+x
G5	Ikundun	gundəgiw- 1+x
G6	Moresada	mʌkʌtər R
G7	Wadaginam	makəga- R

	WANANG (B)	
H1	Atemple	ciemɯn 5
H2	Angaua	njempɨŋ 5
H3	Emerum	gɨnsi 1
H4	Musak	kisag 1+x
H5	Paynamar	kuɓ 1

	BRAHMAN (B)	
I1	Isabi	garikɛ 1
I2	Biyom	ukwʌɪ 1
I3	Tauya	waʔe 1
I4	Faita	kind 1

(A) = MADANG SUPER-STOCK, (B) = ADELBERT RANGE SUPER-STOCK

TABLE III (cont'd)

WORD: *louse*

RAI COAST (A)		
B1	Sinsauru	inɛ 1
B2	Asas	ini 1
B3	Sausi	pae 2
B4	Kesawai	pʌe 2
B5	Dumpu	mi 1
B6	Arawum	mi 1
B7	Kolom	ŋeu R
B8	Suroi	mɛu 1x
B9	Lemio	miyɛ 1
B10	Pulabu	ima 1
B11	Yabong	imiŋ 1
B12	Ganglau	bid R
B13	Saep	miŋ 1
B14	Usino	mi 1
B15	Sumau	mi 1
B16	Urigina	me 1
B17	Danaru	mei 1
B18	Usu	mi 1
B19	Erima	miñou 1x
B20	Duduela	utu 5
B21	Kwato	miñow 1x
B22	Rerau	muñi 1
B23	Jilim	miñi 1
B24	Yangulam	gʌti 5
B25	Bom	mana 1
B26	Male	manak 1x
B27	Bongu	mana 1x
B28	Songum	manʌk 1x

MABUSO (A)		
C1	Kare	mi 1
C2	Girawa	mi 1
C3	Munit	mi 1
C4	Bemal	mɛ 1
C5	Sihan	mi 1
C6	Gumalu	mi 1
C7	Isebe	mi 1
C8	Amele	mi 1
C9	Bau	mi 1
C10	Panim	mi 1
C11	Rapting	mi 1
C12	Wamas	mi 1
C13	Samosa	mi 1
C14	Murupi	mi 1
C15	Saruga	mi 1
C16	Nake	mi 1
C17	Mosimo	mi 1
C18	Garus	mi 1
C19	Yoidik	mi 1
C20	Rempi	mi 1
C21	Bagupi	mi 1
C22	Silopi	mi 1
C23	Utu	mi 1
C24	Mawan	mi 1
C25	Baimak	mi 1
C26	Matepi	mi 1
C27	Gal	mi 1
C28	Garuh	mi 1
C29	Kamba	mi 1

MUGIL (B)		
D1	Mugil	gau 3x

ISUMRUD (B)		
E1	Dimir	igun 3x
E2	Malas	gunu 3
E3	Bunabun	gu:n 3
E4	Korak	mɛm R
E5	Waskia	nanaku R

PIHOM (B)		
F1	Pay	ku 3
F2	Pila	ŋaŋgu 4
F3	Saki	ŋaŋgu 4
F4	Tani	ʌgu 4
F5	Ulingan	kua 3
F6	Bepour	una 3
F7	Moere	kuna 3
F8	Kowaki	ɔna 3
F9	Mawak	nʌndi 3x
F10	Hinihon	nandi 3x
F11	Musar	ɔnʌ 3
F12	Wanambre	wɛna 1
F13	Koguman	uŋ 3
F14	Abasakur	kuŋ 3
F15	Wanuma	gun 3
F16	Yaben	gunu 3
F17	Yarawata	gunua 3
F18	Bilakura	gun 3
F19	Parawen	gunu 3
F20	Ukuriguma	gun 3
F21	Amaimon	gunu 3

JOSEPHSTAAL (B)		
G1	Sileibi	imʌ 1
G2	Katiati	ñima 1
G3	Osum	wutɛ 5
G4	Pondoma	nɯmaŋ 1
G5	Ikundun	nɯma- 1
G6	Moresada	imʌ- 1
G7	Wadaginam	nima- 1

WANANG (B)		
H1	Atemple	ɛman 1
H2	Angaua	emʌn 1
H3	Emerum	timba R
H4	Musak	imɯ 1
H5	Paynamar	maŋg 1

BRAHMAN (B)		
I1	Isabi	nʌma 1
I2	Biyom	mi 1
I3	Tauya	mi 1
I4	Faita	ima 1

(A) = MADANG SUPER-STOCK, (B) = ADELBERT RANGE SUPER-STOCK

TABLE III (cont'd)

WORD: *fire*

	RAI COAST (A)	
B1	Sinsauru	hɛgɛni 4
B2	Asas	hɛgɛni 4
B3	Sausi	ɸɛgɛni 4
B4	Kesawai	hɛgɛni 4
B5	Dumpu	ɸe 1
B6	Arawum	ɸiyɛ 1
B7	Kolom	pai 1
B8	Suroi	pa 1
B9	Lemio	ɸiyɛ 1
B10	Pulabu	lʌmu R
B11	Yabong	fa 1
B12	Ganglau	ipa 1
B13	Saep	fʌh 1
B14	Usino	kɛb 1
B15	Sumau	ɛpi 1
B16	Urigina	ɛmbi 1
B17	Danaru	kɛmbi 1
B18	Usu	waw 4
B19	Erima	eya 2
B20	Duduela	ɛya 2
B21	Kwato	epi 1
B22	Rerau	kayaŋ R
B23	Jilim	kim 1
B24	Yangulam	be 1
B25	Bom	ŋam 1
B26	Male	bɛlɛag R
B27	Bongu	bia 1
B28	Songum	balaˀ R

	MABUSO (A)	
C1	Kare	ɔnda 2
C2	Girawa	ɛp 1
C3	Munit	ɛbi 1
C4	Bemal	ʌb 1
C5	Sihan	dʌy 2
C6	Gumalu	ray 2
C7	Isebe	yai 2
C8	Amɬe	za 2
C9	Bau	rai 2
C10	Panim	zai 2
C11	Rapting	zaleˀ 2x
C12	Wamas	ʌrɛ 2
C13	Samosa	ʌtɛ 2
C14	Murupi	arʌ 2
C15	Saruga	upa 1
C16	Nake	ʌrup 2
C17	Mosimo	ʌre 2
C18	Garus	ahʌl 2
C19	Yoidik	ʌlʌh 2
C20	Rempi	ala 2
C21	Bagupi	imup 2?
C22	Silopi	ɛnʌp 2?
C23	Utu	ɛnap 2?
C24	Mawan	aim 2x
C25	Baimak	aim 2x
C26	Matepi	eim 2x
C27	Gal	aim 2x
C28	Garuh	aɾ̃au 2
C29	Kamba	ar 2

	MUGIL (B)	
D1	Mugil	faˀ R

	ISUMRUD (B)	
E1	Dimir	akuɾ̃ x2
E2	Malas	andup 2
E3	Bunabun	mundub 3x
E4	Korak	tamʌko 5
E5	Waskia	tʌma 5

	PIHOM (B)	
F1	Pay	mud 3
F2	Pila	ŋowab 4
F3	Saki	uwʌb 4
F4	Tani	ɛwʌb 4
F5	Ulingan	mukuna 3x
F6	Bepour	ipomin 1+3
F7	Moere	pikin 1+4
F8	Kowaki	munte 3
F9	Mawak	mundu 3
F10	Hinihon	mundu 3
F11	Musar	mundu 3
F12	Wanambre	mundu 3
F13	Koguman	mut 3
F14	Abasakur	mutu 3
F15	Wanuma	mut 3
F16	Yaben	muta 3
F17	Yarawata	muru 3
F18	Bilakura	mura 3
F19	Parawen	muru 3
F20	Ukuriguma	muta 3
F21	Amaimon	ɔrɛ 2

	JOSEPHSTAAL (B)	
G1	Sileibi	asik 2
G2	Katiati	agu 1
G3	Osum	woguti 1+2
G4	Pondoma	owus 3x
G5	Ikundun	obut 3x
G6	Moresada	uwisʌ 3x

	WANANG (B)	
H1	Atemple	apɾ̃ 3
H2	Angaua	pritam 3+5
H3	Emerum	abuŋ 3x
H4	Musak	ʌb 3x
H5	Paynamar	tʌtɛ 2

	BRAHMAN (B)	
I1	Isabi	tuu 1?
I2	Biyom	oŋgʌti 1
I3	Tauya	oˀo 1
I4	Faita	awu 1?

(A) = MADANG SUPER-STOCK, (B) = ADELBERT RANGE SUPER-STOCK

TABLE III (cont'd)

WORD: *eat*

RAI COAST (A)			MABUSO (A)			MUGIL (B)			JOSEPHSTAAL (B)		
B1	Sinsauru	nɛ 1	C1	Kare	za 2	D1	Mugil	ne 1	G1	Sileibi	ni 1
B2	Asas	nɛ 1	C2	Girawa	zɛ 2				G2	Katiati	ni 1
B3	Sausi	ne 1	C3	Munit	de 2		ISUMRUD (B)		G3	Osum	ni 1
B4	Kesawai	na 1	C4	Bemal	zɛ 2	E1	Dimir	na 1	G4	Pondoma	ni 1
B5	Dumpu	na 1	C5	Sihan	dɛ 2	E2	Malas	an 1	G5	Ikundun	n- 1
B6	Arawum	ñi 1	C6	Gumalu	rɛ 2	E3	Bunabun	an 1	G6	Moresada	ya 2
B7	Kolom	ni 1	C7	Isebe	zi 2	E4	Korak	na 1	G7	Wadaginam	ni 1
B8	Suroi	ña 1	C8	Amele	yɛ 2	E5	Waskia	na 1			
B9	Lemio	ni 1	C9	Bau	lɛ 2					WANANG (B)	
B10	Pulabu	ya 2	C10	Panim	ye 2		PIHOM (B)		H1	Atemple	nja 1
B11	Yabong	u 3	C11	Rapting	zi 2	F1	Pay	nim la	H2	Angaua	na 1
B12	Ganglau	wi 3	C12	Wamas	za 2	F2	Pila	ŋanim la	H3	Emerum	n 1
B13	Saep	Ø 3	C13	Samosa	zʌu 2x	F3	Saki	nime la	H4	Musak	ni 1
B14	Usino	n 1	C14	Murupi	da 2	F4	Tani	im la	H5	Paynamar	ña 1
B15	Sumau	nɛ 1	C15	Saruga	za 2x	F5	Ulingan	ɛnim la			
B16	Urigina	na 1	C16	Nake	za 2x	F6	Bepour	ɛn 1		BRAHMAN (B)	
B17	Danaru	nɛ 1	C17	Mosimo	ya 2	F7	Moere	nem la	I1	Isabi	ne 1
B18	Usu	ni 1	C18	Garus	zɛ 2	F8	Kowaki	in 1	I2	Biyom	n 1
B19	Erima	ni 1	C19	Yoidik	za 2	F9	Mawak	ɛnem la	I3	Tauya	ni 1
B20	Duduela	ñi 1	C20	Rempi	za 2	F10	Hinihon	onom la	I4	Faita	n 1
B21	Kwato	ni 1	C21	Bagupi	za 2	F11	Musar	ɛn 1			
B22	Rerau	ñi 1	C22	Silopi	raun 2x	F12	Wanambre	ɛñ 1			
B23	Jilim	ñi 1	C23	Utu	zaun 2x	F13	Koguman	nom la			
B24	Yangulam	ñi 1	C24	Mawan	da 2	F14	Abasakur	ñi 1			
B25	Bom	ui 3	C25	Baimak	da 2	F15	Wanuma	ni 1			
B26	Male	a,e 1?	C26	Matepi	lan 2x	F16	Yaben	nu 1			
B27	Bongu	we, uyo 3	C27	Gal	la 2	F17	Yarawata	ni 1			
B28	Songum	hɛ R	C28	Garuh	la 2	F18	Bilakura	ña 1			
			C29	Kamba	lɛ 2	F19	Parawen	ni 1			
						F20	Ukuriguma	nɛ 1			
						F21	Amaimon	ni 1			

(A) = MADANG SUPER-STOCK, (B) = ADELBERT RANGE SUPER-STOCK

TABLE III (cont'd)

WORD: *sleep*

	RAI COAST (A)	
B1	Sinsauru	hɛnɛ la
B2	Asas	hɛn la
B3	Sausi	ɛnɛ lb
B4	Kesawai	ɛnɛ lb
B5	Dumpu	kini la
B6	Arawum	kiñi la
B7	Kolom	kiña la
B8	Suroi	kini la
B9	Lemio	kiñi la
B10	Pulabu	sina laR
B11	Yabong	sinɛ laR
B12	Ganglau	sɨna la
B13	Saep	sina la
B14	Usino	kin la
B15	Sumau	inɛ lb
B16	Urigina	kina la
B17	Danaru	kini la
B18	Usu	ini lb
B19	Erima	agorini x+lb
B20	Duduela	ini lb
B21	Kwato	iñ lb
B22	Rerau	kin la
B23	Jilim	kin la
B24	Yangulam	kiñ la
B25	Bom	ŋɛ lx
B26	Male	unɛ lb
B27	Bongu	iñ, ñau lb
B28	Songum	wi R

	MABUSO (A)	
C1	Kare	niŋg lc
C2	Girawa	nino lc
C3	Munit	ni lb
C4	Bemal	amɛsmɛ R
C5	Sihan	ni lb
C6	Gumalu	huni la
C7	Isebe	wahani 2+la
C8	Amele	ni lb
C9	Bau	huni la
C10	Panim	uhan 2+la
C11	Rapting	nina lc
C12	Wamas	nig lc
C13	Samosa	nigu lc
C14	Murupi	nigi lc
C15	Saruga	nag lc
C16	Nake	nɛnɛ lc
C17	Mosimo	nig lc
C18	Garus	nig lc
C19	Yoidik	nig lc
C20	Rempi	nɛg lc
C21	Bagupi	nog lc
C22	Silopi	nog lc
C23	Utu	nog lc
C24	Mawan	nug lc
C25	Baimak	unug 2+lc
C26	Matepi	nig lc
C27	Gal	nigi lc
C28	Garuh	ni lb
C29	Kamba	usni 2+lb

	MUGIL (B)	
D1	Mugil	us lb

	ISUMRUD (B)	
E1	Dimir	in lb
E2	Malas	in lb
E3	Bunabun	ini lb
E4	Korak	ani lb
E5	Waskia	ani lb

	PIHOM (B)	
F1	Pay	in lb
F2	Pila	in lb
F3	Saki	inɛ lb
F4	Tani	in lb
F5	Ulingan	ini lb
F6	Bepour	in lb
F7	Moere	in lb
F8	Kowaki	in lb
F9	Mawak	in lb
F10	Hinihon	in lb
F11	Musar	in lb
F12	Wanambre	in lb
F13	Koguman	in lb
F14	Abasakur	nama R
F15	Wanuma	in lb
F16	Yaben	in lb
F17	Yarawata	in lb
F18	Bilakura	iñ lb
F19	Parawen	in lb
F20	Ukuriguma	in lb
F21	Amaimon	gekwa-in R+lb

	JOSEPHSTAAL (B)	
G1	Sileibi	auku R
G2	Katiati	kaɾ̃ R
G3	Osum	ɡuhi la
G4	Pondoma	gi la
G5	Ikundun	ɡɯn la
G6	Moresada	gɨnɨ lb

	WANANG (B)	
H1	Atemple	ganjɨ la
H2	Angaua	gañi la
H3	Emerum	ani la
H4	Musak	aŋgin la
H5	Paynamar	mangaɾ̃ R+la

	BRAHMAN (B)	
I1	Isabi	one lb
I2	Biyom	akin xla
I3	Tauya	ini lb
I4	Faita	akun xla

(A) = MADANG SUPER-STOCK, (B) = ADELBERT RANGE SUPER-STOCK

1. *ARM* Wurm *KÖS$^{(r)}$Ï(u)Ć^{M}Ü

S1 in the Madang-Adelbert Range languages links with SII of the Trans-New Guinea Phylum languages as listed in McElhanon and Voorhoeve 1970 and matches the first part or all of the reconstructed form. S2 in the Madang-Adelbert Range languages links with SI of the Trans-New Guinea Phylum languages, but an additional initial vowel is found. Differences between dewu versus bara in the Mabuso languages can be explained by metathesis. S4 could be linked with S2 when postulating that in the S2 forms, the initial k- sound had been dropped. But S2 and S4 co-occur in Koguman abu-gaum, and this makes a one-root explanation doubtful.

2. *EYE* Wurm *(avu-)DA‡K^{M}A(-Pur$^{(n)}$)

S1 and S2 are found in separation and in combination as in, for example age-mu. Subset 1a could be understood as an amalgamation of 2+1, but this would be in contrast to the Bongu form ŋam-ge 1+2. S2 links with SI of the Trans-New Guinea Phylum (McElhanon and Voorhoeve 1970) in a full or abbreviated form. S4 links with the SI of the Trans-New Guinea Phylum. S2 and S4 probably have the same root though the material provides no direct evidence. S6 links with the pur element in some of the Trans-New Guinea Phylum languages and with the *-Pur$^{(n)}$ part of Wurm's reconstruction. This co-occurrence makes the same root possibility doubtful.

3. *SKIN* Wurm *KOḌOP^{M}Ika

S1 links with *-P^{M}Ika and S2 with *KOḌO- of the reconstructed form. S2 links with SI of the Trans-New Guinea Phylum languages as listed in McElhanon and Voorhoeve 1970. Both forms are found as variants in a few languages of the Hanseman language group. S2 may well have originated in the Oceanic proto-form *kuli(t). The form kuli, together with its variants, is common among Austronesian languages in the Madang area and this form is in contrast to tini *body*. The author has taken great care to elicit the forms for both *skin* and *body*, though subsequently he has had some doubts as to whether he always received the right forms. The form tɛwɛn (Amele) is another Austronesian form. S4 could be explained as a breakaway form of S1, but the writer has not found enough evidence for this.

4. *EAR* Wurm *(0)KAḌAṂ(a) ∿ ((0)ĆAḌAṂ(a))

S1 links largely with the proto-form, mainly with its part *(0)KAḌ- and with Trans-New Guinea Phylum SII as listed in McElhanon and Voorhoeve 1970. S2 could be regarded as a subset of S1 with metathesis of Ḍ and Ṃ allowed for in many instances. S3 could perhaps also be regarded as a subset of S1, and reflecting the part *-ḌAṂ(a) of the proto-form, though

the final element -oy (damoy in Songum) would have to be explained (< *(a)?). As pointed out, S1, S2 and S3 could be traced back to Wurm's proto-form, but this proto-form would then have had to have undergone a complex history of changes and adaptations. This item illustrates a great complexity and diversity within this language group.

5. *FIRE* Wurm *(Ï)ḌÄ{-Ḍe / -kaP(M)Ä

S2 links largely with the Trans-New Guinea Phylum form SI as listed in McElhanon and Voorhoeve 1970 and matches Wurm's *(I)ḌÄ-Ḍe to a considerable extent. This proto-form suffered many changes in the Madang-Adelbert Range area. S1 links with Wurm's *-kaP(M)Ä. This form might have its origin in the Austronesian root api. Forms such as kembi could be interpreted as an amalgamation of S2 + S1, i.e. Trans-New Guinea Phylum plus Austronesian. The final -p as in enap (Silopi) might be due to Austronesian influence. But yab *fire* is a common form for many Austronesian languages of the New Guinea mainland.

6. *LOUSE* Wurm *TⁿImÄ{ⁿ / ŋ

S1 in its full and shortened form links with Trans-New Guinea Phylum SI as listed in McElhanon and Voorhoeve 1970, and with Wurm's proto-form, and is found almost universally in the Madang, Josephstaal, Wanang and Brahman languages. S2 is very common in the Isumrud and Pihom languages. S5 is an Austronesian loan.

7. *EAT* *(Ï)n(d)A(i) ∿ *(Ï)N(d)A(i)

The full form in MASP appears to be ŋanim, and deviations may perhaps be regarded as breakaway forms. S1 links with the Trans-New Guinea Phylum SI as listed in McElhanon and Voorhoeve 1970 and with Wurm's proto-form, though for the Madang-Adelbert Range area an additional *-m proto-sound would have to be postulated. For forms such as za, da another series S2 is postulated since a sound shift from *n to z, d, r, l is not for instance, paralleled by a similar change for the form na (*you*). The assignment of the root form a, e (Male) is difficult and it could conceivably be assigned to S1 or S3.

8. *SLEEP* *PÄĆÄ(g)O

S1 links with residue forms of the Trans-New Guinea Phylum languages as listed in McElhanon and Voorhoeve 1970. The initial consonant in S1a changes to k-, s- or h- and is dropped in S1b. S1c forms such as nig can be explained as the result of a metathesis of g- with -n-. This form seems to be based on the Austronesian form eno. The initial kV- syllable is also found in a number of Austronesian languages in the Madang District area. If this is the case one may wonder why such an everyday word would be borrowed over such a large area. S2 links with Trans-New Guinea Phylum forms such as isi, etc.

NOTES

1. The fieldwork period from January 1967 to March 1968 and from July to October 1969 was financed by the Swiss Academy of Science and in part by the Australian National University, and the fieldwork period from January 1971 to December 1973 by the Swiss National Fund (Schweizerischer Nationalfonds zur Förderung der wissenschaftlichen Forschung). Professor S. Wurm kindly made available some manuscripts dealing with New Guinea pronoun sets, the Trans-New Guinea Phylum proto-sounds, some Trans-New Guinea Phylum proto-forms and other materials, from which the author profited very much. Professor S. Wurm also encouraged in many ways my linguistic survey of the Madang District. Many thanks are due to Nora Umbricht who helped collect and organize the data from January 1971 to December 1972 and to Jackie and Peter Mühlhäusler for commenting on drafts and in assisting me in finalizing this study. My sincere thanks are extended also to the many informants who worked so patiently with me and to the many helpers of the Administration, and of the Lutheran and Catholic Churches. To all of those who assisted and encouraged me, though I do not mention you by name, I give my sincere thanks.

2. The author was unable to check the 1954 edition.

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2.9. SOUTH-EASTERN TRANS-NEW GUINEA PHYLUM LANGUAGES

T.E. Dutton

2.9.1. INTRODUCTION

South-Eastern Trans-New Guinea Phylum languages occupy (or in the case of Mulaha (or Iaibu) that is now extinct, once occupied) the tail section of Papua New Guinea between the town of Wau in the north-west and Milne Bay in the south-east, except for small areas around the coast east of Cape Possession where Austronesian and several "mixed" languages are now to be found.[1]

There are forty-nine presently identified such languages (although one of these - Binahari - may later turn out to be better regarded as two languages) which belong to the following families and stocks:

FAMILY/STOCK	LANGUAGE	POPULATION[2]	SOURCE
1. Goilalan Family[3]	1. Biangai	1100	Healey 900 (1973:2)
	2. Weri	4200	Healey 3500 (1973:10)
	3. Kunimaipa	8000	Healey (1973:6)
	4. Tauade	8619	Steinkraus and Pence (1964:1)
	5. Fuyuge	9615	Steinkraus and Pence (1964:1)
2. Koiarian Family	1. Koita	2260?	Dutton (1969a:82)
	2. Koiari	1176?	Dutton (1969a:82)
	3. Mountain Koiari	3734?	Dutton (1969a:82)
	4. Barai	3008?	Dutton (1969a:82)
	5. Ömie (or Aomie)	1100	Healey (1973:7)
	6. Managalasi	4000	Healey (1973:6)
3. Kwalean Family	1. Humene	438	Dutton (1970:882)
	2. Kwale	719	Dutton (1970:882)
	3. Mulaha	(Extinct)	Dutton (1970:889-90)

Dutton, T.E. "South-Eastern Trans-New Guinea Phylum Languages". In Wurm, S.A. editor, *New Guinea area languages and language study, Vol. 1, Papuan languages and the New Guinea linguistic scene.* **C-38:613-666**. Pacific Linguistics, The Australian National University, 1975. DOI:*10.15144/PL-C38.613*

FAMILY/STOCK	LANGUAGE	POPULATION	SOURCE
4. Manubaran Family	1. Doromu	841	Dutton (1970:882)
	2. Maria	2105?	Dutton (1970:882)
5. Mailuan Family	1. Domu	482	Dutton (1971a:20)
	2. Morawa	755	Dutton (1971a:20)
	3. Binahari	770	Dutton (1971a:20)
	4. Bauwaki	378	Dutton (1971a:20)
	5. Magi (or Mailu)	4662	Dutton (1971a:20)
	6. Labu	51?	Dutton (1971a:22;Thomson 1975b)
6. Dagan Family	1. Daga (or Dimuga)	5326?	Dutton (1971a:15)
	2. Mapena	274	Dutton (1971a:15)
	3. Gwedena	2161?	Dutton (1971a:15)
	4. Ginuman (or Dime)	775	Dutton (1971a:15)
	5. Sona	1661?	Dutton (1971a:15)
	6. Jimajima	542?	Dutton (1971a:15)
	7. Maiwa	1298?	Dutton (1971a:15)
	8. Onjob	160	Dutton (1971a:15)
7. Yareban Family	1. Abia	579?	Dutton (1971a:12)
	2. Doriri	571?[4]	Dutton (1971a:37)
	3. Sirio	363?	Parlier (1974:Personal Com.)
	4. Yareba	750	Dutton 1100?[4] (1971a:36-7)
	5. Bariji	256	Dutton (1971a:12)
8. Binanderean Stock	1. Guhu-Samane	4000	Dutton 5000 (1973:5)
	2. Suena	2000	Wilson 1400 (1969a:66)
	3. Yekora	300	Wilson (1969a:66)
	4. Zia	3300	Wilson (1969a:66)
	5. Binandere	3000	Wilson (1969a:66)
	6. Ambasi	1200?	Estimated
	7. Aeka	2000?	Estimated
	8. Orokaiva	25000	Wilson (1969a:66)
	9. Hunjara	4265?	Dutton (1973:5)
	10. Notu (or Ewage)	10000	Wilson (1969a:66)
	11. Yega	900	Wilson (1969a:66)
	12. Gaina	128?	Dutton (1971a:33)
	13. Baruga	1051?	Dutton (1971a:34)
	14. Dogoro	119	Dutton (1971a:35)
	15. Korafe	4194?	Dutton (1971a:35-6)

Central to this grouping (given above under 1.-8.) geographically is the Koiarian Family which stretches across the mainland from around Port Moresby on the southern coast almost to the sea on the northern coast at the eastern end of the Hydrographers Range.

Neighbouring this to the north-west is the Goilalan Family, the major part of which is to be found in the very mountainous area in the north-west corner of the Central District but with smaller portions on the northern side of the main range in the southern corner of the Morobe District and western corner of the Northern District.

The Kwalean and Manubaran Families are small families on the southern side of the Owen Stanley Range in the Rigo Subdistrict of the Central District. These two families share common borders with the Koiarian Family.

Further west are the Yareban, Mailuan and Dagan Families in that order. The Yareban Family is not large and is basically a Middle-Musa River family but member languages are widely spread and found around the southern tributaries of the Bariji River in the north and both sides of the main range inland of Cape Rodney in the south.

The Mailuan Family stretches along the south coast between Cape Rodney and mid-Orangerie Bay and inland of Cloudy Bay. It has common borders with the Yareban Family already mentioned and the Dagan Family which is the most easterly of all the families.

The latter family also stretches across the mainland - between Table Bay and Orangerie Bay on the south coast and Collingwood Bay in the north. It is the largest family except for the Binanderean Family which is the major part of the Binanderean Stock. This family occupies much of the Northern District and stretches from around Cape Nelson in the east to the Maiama River in the Morobe District to the west. Together with the Guhu-Samane language of the Waria River area this family makes up the Binanderean Stock.

LEGEND TO MAP 1

A) NON-AUSTRONESIAN (OR PAPUAN) LANGUAGES

The various stocks (mostly stock-level families) indicated on the map by different hatchings are identified in the legend on the map itself. The languages within the individual families are referred to by numbers which correspond to those used in the list of languages given towards the beginning of 2.9.1.

B) AUSTRONESIAN AND UNCLASSIFIED LANGUAGES

On the map, also the locations of Austronesian and unclassified languages are shown. The Austronesian languages are as follows:

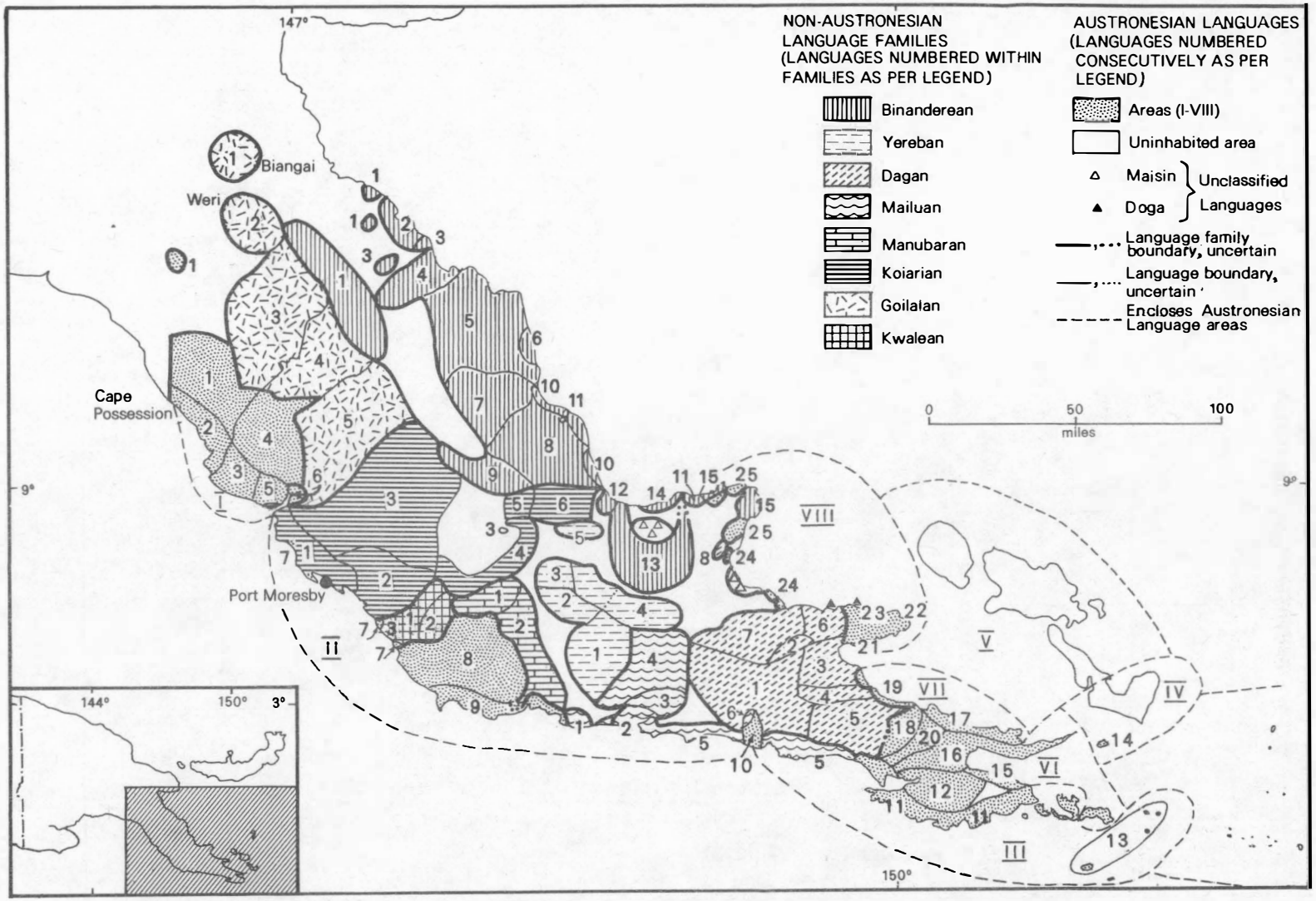
Group I	1. Mekeo	6000?	Estimated
	2. Roro (or Waima)	7000?	Estimated
	3. Nara (or Pokau)	7627	Bluhme (1970:867)
	4. Kuni	1700?	Estimated
	5. Kabadi (or Gabadi)	1400?	Estimated
	6. Doura	800?	Estimated
II	7. Motu	13000+	Taylor (1970:1)
	8. Sinagoro	12026	Dutton (1970:882)
	9. Keapara	16423?	Dutton (1970:882)
	10. Magori	194	Dutton (1971a:9; 1971b)
III	11. Suau	6795	Lithgow in (II)4.4.10.1.3.
	12. Buhutu	1065	Lithgow in (II)4.4.10.1.3.
	13. Tubetube	1190	Lithgow in (II)4.4.10.1.3.
IV	14. Nuakata	935	Lithgow in (II)4.4.10.1.3.
VI	15. Wagawaga	1020	Lithgow in (II)4.4.10.1.3.
	16. Kehelala (or Basilaki)	7990	Lithgow in (II)4.4.10.1.3.
VII	17. Wedau	1228+?	Dutton (1971a:32)
	18. Dawawa	1627?	Dutton (1971a:32)
	19. Boianaki (or Galavi)	1175	Dutton (1971a:32)
VIII	20. Igora	449?	Dutton (1971a:33)
	21. Paiwa (or Gapapaiwa)	1321	Dutton (1971a:33)
	22. Mukawa (or Are)	1231	Dutton (1971a:33)
	23. Gabobora (or Anuki)	532	Dutton (1971a:33)
	24. Ubir	912	Dutton (1971a:33)
	25. Arifama-Miniafia	2147?	Dutton (1971a:30-31)

Unclassified Austronesian: Doga ? Dutton (1971a:7-8). Population figures included in Gobobora (or Anuki) figures given above.

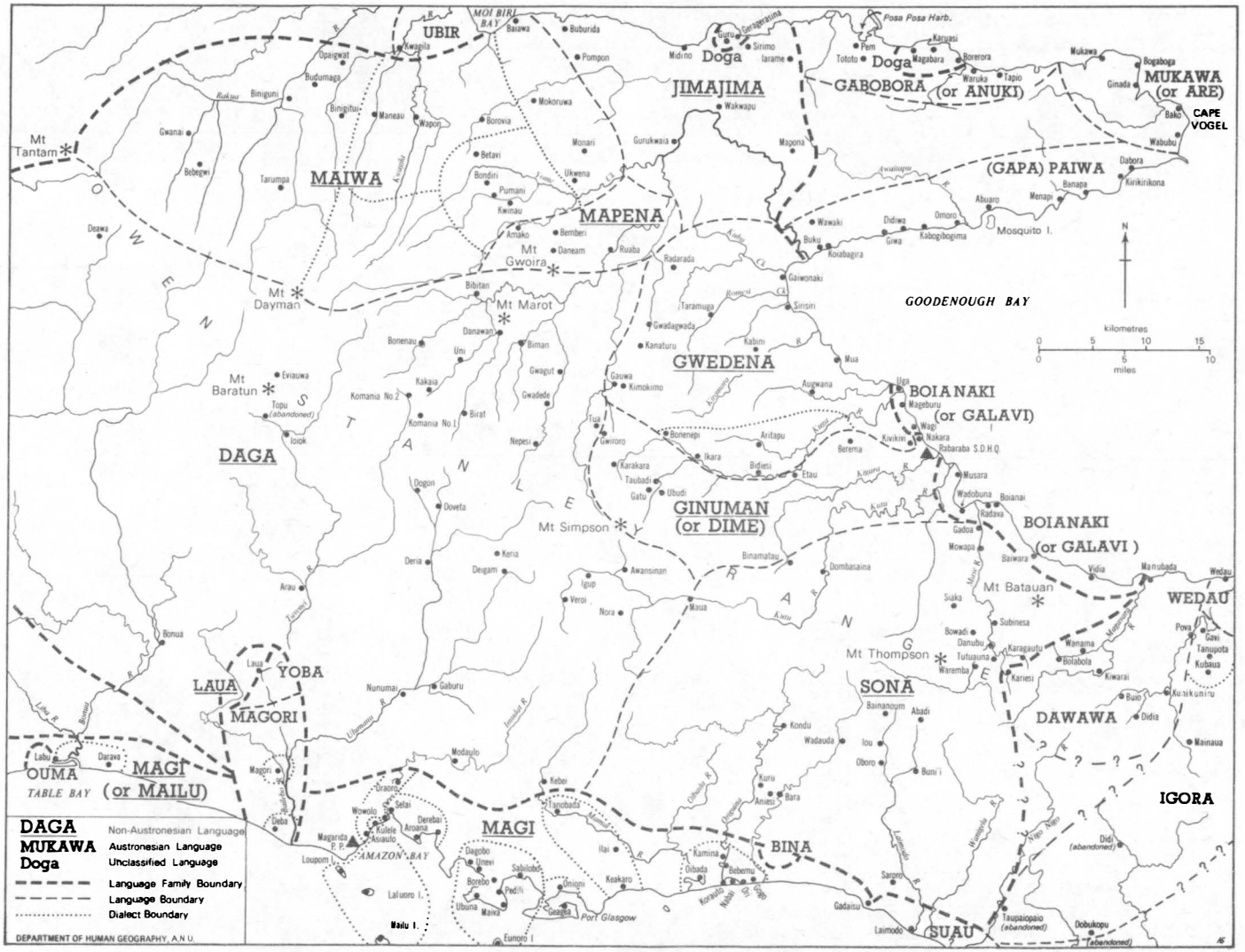
For information on Austronesian languages of the area see (II) 4.4.2. and (II) 4.4.3.

Unclassified: Maisin 1773? Dutton (1971a:29).

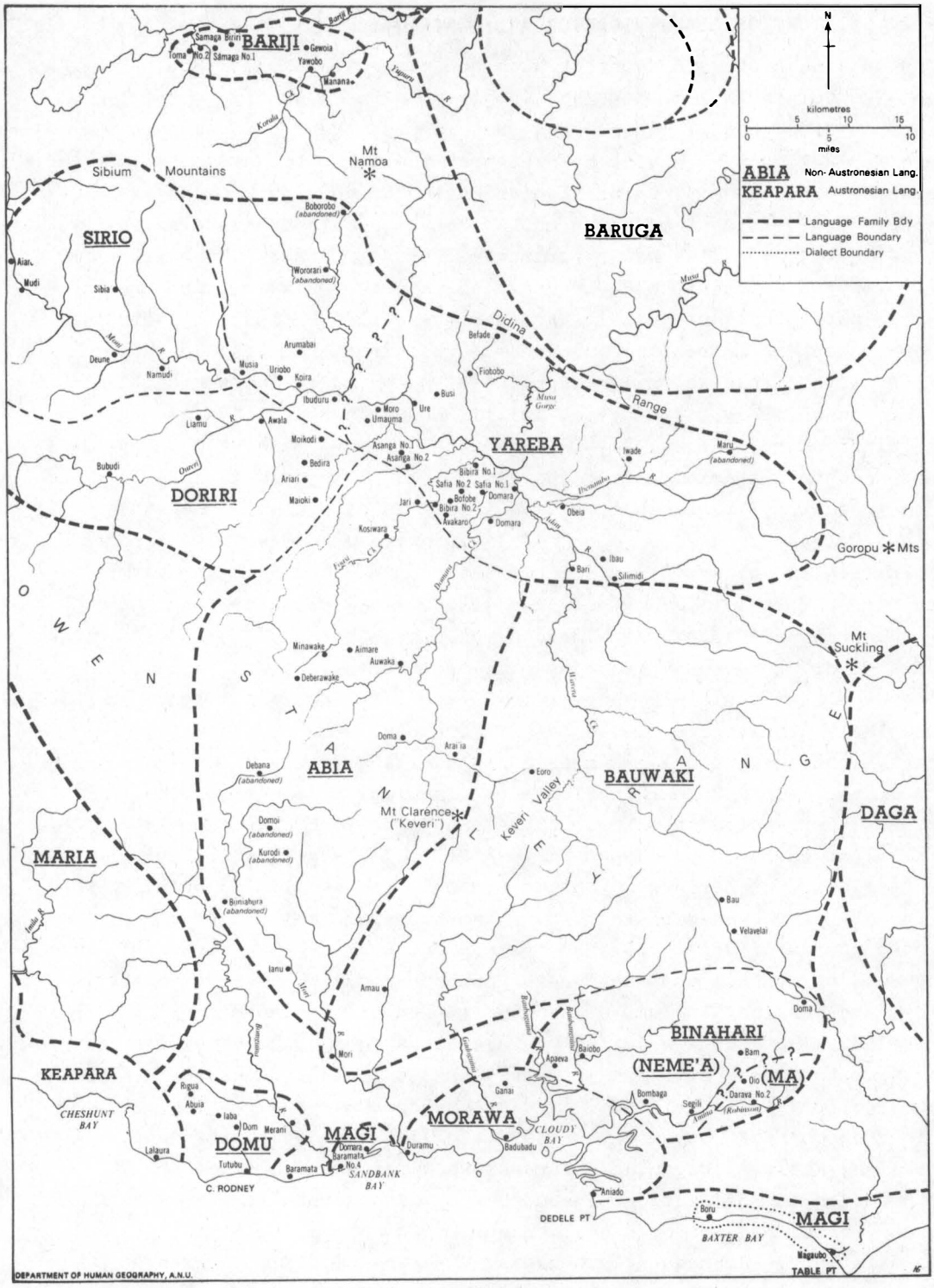
Maisin is an Austronesian-Papuan "mixed" language of doubtful status (see (II) 4.5.1.).



MAP 1: SKETCH MAP OF LANGUAGES OF CENTRAL AND SOUTH-EAST MAINLAND PAPUA



MAP 2: MAP SHOWING LOCATION OF RECENTLY DEFINED LANGUAGES AND DIALECTS ON THE SOUTH COAST OF PAPUA (AFTER DUTTON (1971a))



MAP 3: MAP SHOWING LOCATION OF SIRIO LANGUAGES (AFTER DUTTON (1971a))

2.9.2. HISTORY OF CLASSIFICATION AND DESCRIPTION

An outline history of contact with and classification of South-East Trans-New Guinea Phylum languages is given in the Appendix to this chapter. From this it can be seen that many of the languages have been known for a long time having been amongst the first to have been contacted by Europeans. Yet for reasons having to do with the particular history of development of Papua most of these remained unstudied (except for isolated cases like Mailu (or Magi), Fuyuge, Tauade, Binandere) and their interrelationship unclear until the nineteen sixties when the Summer Institute of Linguistics and the Australian National University began showing an increasing interest in this area. Since then many of the hitherto little-known languages have been studied in some depth (e.g., Biangai, Weri, Kunimaipa, Koiari, Mountain Koiari, Barai, Ömie, Managalasi, Daga, Yareba, Korafe, Suena, and Guhu-Samane) and the whole area has been systematically resurveyed.

The results of this research have shown, in particular, that the various "groups" and "subgroups" of languages and "dialects" described by S.H. Ray and others had wider connections than had been thought at that time and really belong to a number of families and a stock, the names and membership of which have already been set out above.

The first of these suggestions came from Steinkraus and Pence (1964) who showed that the three languages - Fuyuge, Tauade, Kunimaipa - in the Goilala Subdistrict of the Central District were sufficiently closely related to be regarded as constituting a family. Soon afterwards Pence (1966:66) (a Summer Institute of Linguistics member working in Kunimaipa) suggested that these three languages were also closely related to Wele (or Weri) in the Upper Waria River and Biangai (near Wau) over the ranges to the north-west, and so the Goilalan Family was born.

In 1969 I published an account of the Koiarian Family. In the process I noted that my research at that stage suggested that most of the Papuan languages of central and south-east Papua probably belonged to "a common stock, and possibly Phylum, distantly related to the languages of the Central Highlands of New Guinea" (p.3), although it had been known for some time that some of these languages showed lexical connections with languages (particularly Kiwai) in western Papua - see Wurm (1951:120-23).

In subsequent surveys (Dutton 1970, 1971) I defined the Kwalean, Manubaran, Mailuan, Dagan, and Yareban Families and clarified the distribution and definition of a number of Binanderean languages that Wilson (1969a) had not been able to survey for his account of that family in 1969. Subsequently Hooley and McElhanon (1970) suggested that Guhu-Samane was most closely related to the Binanderean languages

and suggested the existence of a Binanderean Stock.

At about this time there was tremendous interest in the classification of Papuan languages and the changing linguistic picture that was emerging, and Wurm (1971), acting on suggestions made by me during a preliminary analysis of some of the materials collected in 1969, grouped the Koiarian, Manubaran, and Yareban Families together provisionally as a stock, and these and other families (there was no Binanderean Stock at that time) together as the South-East New Guinea Phylum within his Central New Guinea Macro-Phylum. Subsequently, following other suggestions made by McElhanon and Voorhoeve (1970), the Macro-Phylum was converted into the Trans-New Guinea Phylum and the South-East New Guinea Phylum lost its identity as such, although (for reasons to be outlined below) it is still seen as a separate or distinct section of that Phylum.

Since then I have had the opportunity of looking more closely at the relationship between these languages and families and come to the conclusion (for reasons also outlined below) that although these languages can certainly be regarded as Trans-New Guinea Phylum ones there is no clear-cut evidence for subgrouping them in any one particular way above the family level. The Kwalean Family, however, seems to have least in common with all other families and may therefore represent a sub-phylum-level Isolate, although it is difficult to be sure at this stage because of all the families it (and the Manubaran) are the ones about which least is known. Of particular import also, is the fact that there is little evidence (apart from some lexical correspondences which have to be interpreted in a wider context) for the existence of a Koiarian-Manubaran-Yareban Stock as previously suggested.

At this point then the number, distribution, size (except for a few isolated cases), and interrelationship of Trans-New Guinea Phylum languages in south-east Papua New Guinea is fairly clear. What is needed now is more detailed descriptive and comparative work in as many languages and families as possible. Much information is already available and much more has become so in the very recent past with the publication of a series of grammatical sketches of many of the now best studied languages by members of the Summer Institute of Linguistics and others in a volume edited by the present author.[5] At the same time there are still families such as the Kwalean and Manubaran which are virtually unknown and should be given top priority in future research programmes.

2.9.3. GENERAL CHARACTERISTICS OF SOUTH-EAST TRANS-NEW GUINEA PHYLUM LANGUAGES

In what follows I outline some of the general characteristics of the South-East Trans-New Guinea Phylum languages abstracted from sources

currently available, but especially Wilson (1969a), Capell (1969), Healey *et al.* (1969) (on the Binanderean language Family or Stock), Dutton (1969a, 1970) (on the Koiarian, Kwalean, and Manubaran Families), Ray (1912a,b), Pence (1964, 1966, 1968), Pence *et al.* (1970) (on the Goilalan Family), Saville (1912) (on Magi of the Mailuan Family), Murane, J. and E. (1967) (on Daga of the Dagan Family), and Weimer, H. and N. (1970, 1972) (on Yareba of the Yareban Family), and on the unpublished field notes collected by me in 1969. In the process no attempt will be made to distinguish characteristics of individual families as such. This is a task for the future on the basis of the series of sketch grammars referred to in the last paragraph of the previous subsection 2.9.2. which not only provides a more reliable basis for such a description but also serves as published illustrative examples. The following discussion will proceed from a consideration of phonological, morphological and syntactic features of the languages concerned to a brief résumé of their lexical similarities.

2.9.3.1. *PHONOLOGICAL ASPECTS*

On the phonological level all South-East Trans-New Guinea Phylum languages usually have two series of stops, some fricatives, two nasals (m and n), a vibrant r or a lateral l, and two semi-consonants w and y. In each case the series of stops is distinguished by voicing, or lack of it, and made at three or four points of articulation (bilabial, alveolar, velar, glottal). Where there are fricatives, f usually has no corresponding p in the series of stops, but p occurs as a positional variant of f. Vibrants and laterals also usually have laterals and vibrants as allophones respectively and these are usually flapped. Vowel systems are simple and based on five vowels (i, e, a, o, u). Some languages are tonal but stress is generally important and related to intonation which may be quite complex. Many languages also have complex morphophonemic rules.

2.9.3.2. *MORPHOLOGICAL FEATURES*

On the morphological level the following features are common:
1. Pronouns belong generally to Wurm's (1972) suggested Set I type (see 2.3.3.2.) in both form and system. That is, most languages have some forms related to ones like the following for first and second person:

	Sg	Pl
1	na	ni
2	ka	ki/te

- see for example those given for *I* in the comparative vocabulary below - although the agreement is never total so that the area tends to present a rather mixed appearance in this feature. Furthermore no male-female distinction is made and few languages make inclusive-exclusive distinctions in their first person forms. Dual forms of pronouns are regularly formed from other forms (except in some languages of the Koiarian, Yareban and Binanderean families). Finally, in most languages special forms of the pronoun (or pronoun + suffix) are used to indicate possession.

2. Verb forms are morphologically complex with tense, aspect, mood, person and/or number of the object and/or subject indicated by suffixes rather than prefixes. Special medial-verb forms also occur to indicate subordination of the first of two verbs, usually with different forms denoting the identity or non-identity of the subjects of those verbs. In some areas (e.g. Koiarian) these are relatively simple but in others (e.g. Binanderean) much more complicated. Finally verb stems may change (usually for a select subset of verbs) to indicate that more than one object is involved (e.g. the verb form for *to carry one object* may be different from that used for *to carry more than one object*).

3. Plurality is not signalled morphologically in most nouns though some languages have small subset exceptions which are usually kinship terms, or they distinguish collectivity from plurality by reduplication (either partial or complete). Noun classes are rare and generally restricted to the alienable-inalienable type.

4. Counting systems are based on two or three (e.g. 1, 2, 2+1, 2+2, 1 hand, or 1, 2, 3, 2+2, 1 hand). More complicated systems using body parts have also been reported (Ray (1907:364)) for certain languages in the Lower Musa River area of the Northern District but the extent of this is not known.

2.9.3.3. *SYNTACTIC FEATURES*

On the syntactic level the most important features are:

1. a subject-object-verb word order;
2. subordination indicated by medial-verb forms with the subordinate clause coming before the main clause and an absence of conjunctions;
3. no passive voice.

Thus typologically these languages can be seen to possess many of the features characteristic of those of other Trans-New Guinea Phylum languages described in preceding sections of this volume. There are, however, a number of features which set these languages off as a group from the main body of Trans-New Guinea Phylum languages and which lead to their being regarded as aberrant in some ways. One of these is, as

already noted, that the pronoun forms do not consistently belong to one of the sets suggested by Wurm (1972) but appear rather as mixed sets. Other features are that one does not find the complex consonants (e.g., laterally released, labio-velar, pre-glottalized) that characterize many of the Trans-New Guinea Phylum languages elsewhere. Nor are there the complex syllable patterns or wide ranges of allophonic variation in phonemes that are found elsewhere. Perhaps more importantly noun class systems based on classificatory or existential verbs are only very weakly in evidence. There are, however, different forms for negatives depending on the sentence type (e.g. verbal vs. non-verbal). Finally, there are generally no changes in the verb form or affixes added to indicate interrogative sentences. This is usually achieved by intonation although there are morphologically marked elements in interrogative sentences.

2.9.3.4. *LEXICAL CORRESPONDENCES*

Lexically South-East Trans-New Guinea Phylum languages contain apparent cognates for between 10% and 40% of the 53 items of basic vocabulary found by McElhanon and Voorhoeve (1970) to yield interphylic series of apparent cognates elsewhere and which they used to suggest the existence of the Trans-New Guinea Phylum. Space does not allow the publication of the complete set of forms but the following sample will illustrate the kinds of correspondences that have been observed. (See also 2.4.1.5.5.3. in this volume). Note that Binanderean languages (symbolized BIN) score highest with around 40% correspondence, Goilalan, Koiarian, Mailuan, Dagan, and Yareban languages (symbolized GOI, KOI, MAI, DAG, and YAR) respectively) next with around 20%, and Kwalean and Manubaran languages (symbolized KWA and MAN respectively) lowest with around 10%. The list follows:

English	Trans-New Guinea Phylum Series and Selected Examples	Evidence from South-East New Guinea Languages
breast	Series I: ome, am, muk, mo, omo, amo, mum, mame, namu	KOI: amu, mosu, musa MAI: 'ama, ama, yama DAG: ama(nawa), amu YAR: 'ama, ama BIN: ami, emi

English	Trans-New Guinea Phylum Series and Selected Examples	Evidence from South-East New Guinea Languages
eat	Series I: ne, e, na, en, ane, ine, da, ni, no	GOI: ni, yɛn, naro, nai, ne KOI: i KWA: anE, ina MAN: iri MAI: isi, isa, hiso, gihi DAG: na YAR: ine, 'i'i, ia, isi BIN: na, ni, inde, unde
eye	Series Ia: ki, ti, ko, i, ta, da, de, te, dza, dze, si, se	GOI: wire, itu, ita, ĩ: KOI: ni, nio, nia, nuni MAN: ne, neuna MAI: ni, ni(gaba), ni('aba), ini DAG: nangawa YAR: naisa, ni'aba, na, diti BIN: diti, tihi, tiri, kiti, dzisi
fire	Series I: doe, de, ne, doro, dau, daru, dit, ti, te, dere, dze, dzi, dzo', da'	GOI: yetitik, iziradi, iti KOI: idi (*tree*), idzə, idu, itʃa KWA: ire(roga) MAN: ita DAG: iya su'a YAR: ina'a, ina BIN: niau, dzi, ĩ:, zi
I	Series I: noro, no, nu, ne, na, ano, nʌk, nok, ni, nane	GOI: ne, na KOI: da, di, na MAN: na MAI: ina (in one language only) DAG: ne, na, nau YAR: na BIN: na, namo nane (emphatic)

English	Trans-New Guinea Phylum Series and Selected Examples	Evidence from South-East New Guinea Languages
moon	Series II: mɛso, maso, mosa	KOI: manærə, masape MAI: manbe YAR: manabe BIN: manabe (Note: These forms are only doubtfully related to the TNGP series given. They are also found only in one or two languages in their respective families and are distributed in such a way that they very probably represent borrowings.)
mother	Series I: enea, enew, naŋ, ena, mɛ, ama, amu, maramu, mo, mom, na, name, men, miŋ, mi, naga, namo, momo, maŋgo'	GOI: panu, ma: KOI: neina, sei, mamo KWA: noka, nanu MAN: ame'e MAI: aba'i, naina, adei, mama'ai DAG: ina(nawa), hinae YAR: ama'e BIN: ambia, mia (Note: There appear to be two series here - an n and an m - which link up with combined forms given in the TNGP series opposite. In the listing the n series is given before the m series.)
sun	Series I: yaw, yowi, sawe, sowo, toe, kadɛpa, qawɛ, yanep, sep, iyep, yep, sep, kaiwe, karip, kʌsu, dzaŋ, dzoaŋ, sual	GOI: kitip, kita BIN: idzi, izi, iyi, iri
tongue	Series I: mare, omane, komen, meremai, mɛlɛpila, mələ, mɛlepi, mipi, mepu, mombir, mel, mimbi, mabim	KOI: meina, neme KWA: manane, mazane MAI: maena DAG: meri(nawa) YAR: meana

English	Trans-New Guinea Phylum Series and Selected Examples	Evidence from South-East New Guinea Languages
tooth	Series I: titi, hi, sis, ŋɛt, nesar, ɛzɛt, ezet, dzɛt, dzot, dzit, dot, sot	GOI: kili, kɩ.t, kitira, usi BIN: dzi, ti, di, diaka, dika (Perhaps also KWA: gate, gade; DAG: note)
	Series II: niŋambo, niŋi, gɛn, ŋgen	YAR: ni'o, nio
	Series III: pɛrɛ, marɛ, pes, poso, mɛn, mi, mai, mati, miti, maha, me, ma, mi'	MAI: ma'a DAG: moana

2.9.4. SUB-GROUPS ABOVE THE FAMILY-LEVEL

In the previous subsection it was noted that South-East Trans-New Guinea Phylum languages contain apparent cognates for between 10% and 40% of the 53 items of basic vocabulary found by McElhanon and Voorhoeve to yield interphylic series of apparent cognates elsewhere. Note, however, that although these percentages suggest subgroups of families somewhat different from those suggested tentatively in Wurm 1971 and referred to in subsection 2.9.2. above, they cannot be taken to indicate such subgroups because other factors have to be taken into account. For one thing there are different interphylic series involved - see *tooth* in the comparative list given above - and families do not necessarily have apparent cognates related to the same series. Moreover, families may contain other apparent cognates which do not belong to any of the series established by McElhanon and Voorhoeve (1970) which were not taken into account. On the other hand these percentages do suggest that Binanderean languages are more closely related to those elsewhere and act as a link between them and the remaining South-East Trans-New Guinea Phylum languages.

To solve the question of internal subgrouping then let us begin by looking again at the 53 items from McElhanon and Voorhoeve (1970) to see how many of these families share with each other. The following chart summarizes the results obtained by comparing families two at a time for these items:

	GOI	KOI	KWA	MAN	MAI	DAG	YAR	BIN
GOI	X	20%	10%	12%	8%	12%	8%	14%
KOI	20%	X	12%	18%	24%	22%	26%	20%
KWA	10%	12%	X	8%	12%	12%	12%	8%
MAN	12%	18%	8%	X	10%	12%	16%	12%
MAI	8%	24%	12%	10%	X	16%	26%	14%
DAG	12%	22%	12%	12%	16%	X	14%	16%
YAR	8%	26%	12%	16%	26%	14%	X	18%
BIN	14%	20%	8%	12%	14%	16%	18%	X

Without placing any emphasis on the exact values given but more on their relative values relevant observations on these figures are:

1. GOI scores highest with its nearest neighbour KOI and evenly low with the remainder, but decreasing somewhat over distance.
2. KOI scores high with all families except KWA.
3. KWA scores evenly low with all families.
4. MAN scores evenly low with all families except KOI and YAR.
5. MAI scores highest with neighbouring YAR but also high with KOI and then in decreasing order corresponding fairly well to increasing distance.
6. DAG scores high with KOI and evenly low with the remainder except the nearer MAI and BIN.
7. YAR scores highest with KOI and neighbouring MAI and evenly low with the remainder except BIN which is also its northern neighbour.
8. BIN scores highest with KOI and then in descending order corresponding with distance.

The only significant points which seem to emerge from this are that the Koiarian languages seem to act as a link between all others. However, if one looks closer at the distribution of languages one will find that Koiarian Family languages are in contact with more other families than any other family is (notably Goilalan on the west, Binanderean on the north, Kwalean and Manubaran to the east, and Yareban in the north-east). Consequently this linking position is to be suspected of being the result of undetected borrowings rather than of genetic relationship, especially when in the other evidence four out of the remaining seven cases (1, 5, 7, 8) score highest with their neighbours.

If this is true then there is little evidence lexically (at least as far as this sample illustrates) for any kind of subgrouping above the family-level, although there is the suggestion that Kwalean languages,

being uniformly "distant" from all languages, should perhaps be regarded as some kind of isolate. Note also that these figures, while giving some support to the 1971 suggestion that Koiarian, Manubaran, and Yareban languages constitute a stock, show that that suggestion was based on insufficient evidence taken out of context of the total set of families in this area which were still under consideration at that time.

Now if we take into account typological features (wherever there is adequate evidence available) we find that the picture is further confused by a series of cross-cutting classifications. Take, for example, the following five structural features extracted from a larger set covering most of those discussed in subsection 2.9.3. above as indicative of the Trans-New Guinea Phylum status of these languages, which are in some ways indicative of subgroups:

1. **The Presence or Absence of Subject Markers**

Here we find that excluding Goilalan languages (for which there is insufficient evidence), Kwalean, Manubaran, Mailuan, and Koiarian languages have these as against Dagan, Yareban, and Binanderean ones which do not.

2. **Presence and Nature of Object Referents (OR's) in the Verb**

Here, except for the Goilalan Family (for which again there is inadequate evidence), Koiarian, Yareban, and Binanderean Families group together in distinguishing number in OR's, as against Kwalean, Manubaran, Mailuan, and Dagan which have individual forms of OR's corresponding to differences in person and number of the object.

3. **Relative Order of Object Referent (OR) and Tense, Aspect, and Subject Markers (TAS) in Verbs**

Because of (2) above this test acts as a subclassifier of the results of (2) except where some languages (e.g. Koiarian) have both. Bearing this in mind it seems to be the case that Kwalean, Manubaran, and Mailuan Families group together with order TAS-OR, Koiarian and Dagan with OR-TAS, and Yareban and Binanderean as having no formally marked OR although the number of the object may be indicated by reduplication of the verb stem.

4. **Stem Changes for Different Number of Object**

Excluding Kwalean, Manubaran, and Mailuan languages (for which there is no evidence presently available), Koiarian, and Dagan languages group

together as having these as against Goilalan, Yareban, and Binanderean ones which do not.

5. Form of Negative in Verbal Sentences

Goilalan, Koiarian, and Kwalean languages seem to have related forms (me, bebe, and meme respectively) which are distinct from Manubaran, Mailuan, Dagan, and Yareban ones which also have related but different forms (ide, da, da/ya, and da respectively). Binanderean languages are alone in having ae.

Now if these five cases are plotted together graphically we get something like the following grouping:

	GOI	KOI	KWA	MAN	MAI	DAG	YAR	BIN
1.	-	KOI	KWA	MAN	MAI	DAG	YAR	BIN
2.	-	KOI----------					YAR	BIN
			KWA	MAN	MAI	DAG		
3.	-	KOI----------				DAG	YAR	BIN
			KWA	MAN	MAI			
4.	GOI----------						YAR	BIN
		KOI----------				DAG		
			-	-	-			
5.	GOI	KOI	KWA	MAN	MAI	DAG	YAR	BIN

From this it appears that there is just a tendency for Kwalean, Manubaran and Mailuan languages on the one hand and Yareban and Binanderean on the other to group regularly together, with Koiarian and Dagan showing some connections but generally marginal to the other groupings. The position of Goilalan languages is uncertain.

Now if we compare this with the lexical picture discussed above we shall see that whereas the Kwalean Family appeared to be rather isolated lexically it seems to group fairly well with the Manubaran and Mailuan Families typologically. Similarly the Koiarian Family does not show up as a linking family as it seemed to lexically but tends to have more in common with the Dagan Family than any other, though without further evidence from Goilalan languages this cannot be pressed too far. Finally the Yareban Family seems to have more in common with Binanderean languages then the lexical evidence seemed to predict. In short there is a conflicting pattern of relationship evident at different levels of structure

in South-East Trans-New Guinea Phylum languages which does not allow for them being subgrouped further in any one way on the present evidence.

2.9.5. THE INDIVIDUAL FAMILIES AND THE BINANDEREAN STOCK

2.9.5.1. *GOILALAN LANGUAGES*

The Goilalan Family consists of five languages - Biangai, Weri, Kunimaipa, Tauade, and Fuyuge - spoken in the mountainous area in the north-west corner of the Central District and the southern and western corners of the Morobe and Northern Districts respectively.

2.9.5.1.1. Weri and Biangai

These are two small languages in the Morobe District. Weri is spoken by approximately 4200 people living in the headwaters of the Biaru, Waria, and Ono Rivers. Biangai (1100) is spoken further north in a number of villages around Wau in the headwaters of the Bulolo River. Both consist of two dialects (Hooley and McElhanon 1970:1076). According to Boxwell (quoted in Hooley and McElhanon (1970:1076)) the two languages share approximately 36% basic vocabulary.

Detailed studies of Weri and Biangai have been carried out by members of the Summer Institute of Linguistics who have been working in them since 1960 and 1962 respectively although much of the linguistic information gathered on them is still unpublished except for M. and H. Boxwell 1966 and M. Boxwell 1967, and R. and M. Dubert 1973. A listing of literacy materials prepared in both by Summer Institute of Linguistics members is given in Healey 1973:41-4; 60-1.

2.9.5.1.2. Kunimaipa

This is a bridge language, geographically and genetically speaking, between Tauade and Fuyuge on the southern side of the main range and Weri and Biangai on the northern. It is spoken mainly in the upper reaches of the Kunimaipa and Biaru Rivers in the Central District and in the upper reaches of the Ono and Bubu Rivers in the Northern and Morobe Districts. The language is often referred to as Gajili (or Gazili, Ghazili) but strictly speaking this is the name of the dialect spoken in the Bubu River area of the Morobe District and the one studied by members of the Summer Institute of Linguistics. French Missionaries of the Sacred Heart have also studied Kunimaipa (particularly as spoken on the southern side of the main range) and have prepared grammatical sketches of it though these again are still in manuscript form.

Both the Summer Institute of Linguistics and the French Missionaries

have, however, prepared literacy materials in the language. Lists of these can be found in Steinkraus and Pence 1964:7-8, and Healey 1973:52-3. Various linguistic sketches of parts of the languages have been published by Pence (1964, 1966, 1968, 1971) and A. Pence, E. Geary and D. Bjorkman (1970), but a number of manuscripts are also in the hands of the Summer Institute of Linguistics, New Guinea Branch.

According to Boxwell (quoted in Hooley and McElhanon 1970:1076) Kunimaipa shares 37% basic vocabulary with Weri and 33% with Biangai.

2.9.5.1.3. Tauade

This is the second largest language of the family and is spoken in the headwaters and tributary valleys of the Angabunga (or St. Joseph's) River. It is most closely related to Kunimaipa with which it shares 44% basic vocabulary. Like Fuyuge and Kunimaipa it is dialectally diverse and has long been studied by French Missionaries of the Sacred Heart but no grammars of it have been published. However, teaching and literacy materials have been prepared in it and a listing of these to 1964 is given in Steinkraus and Pence 1964:7.

2.9.5.1.4. Fuyuge

This is the largest language of the family, and is spoken mainly in the valleys of the Vanapa, Dilava, and Auga Rivers on the southern side of the main range and in the Chirima River valley on the northern side of the same range. According to Steinkraus and Pence (1964:3) Fuyuge is dialectally quite diverse with notable variation between speakers from each of the river valleys. The language is also lexically quite divergent from its nearest relatives, Tauade and Kunimaipa, sharing only 27% and 28% of basic vocabulary with each respectively.

Fuyuge is well known by the French Missionaries of the Sacred Heart who have been in the area since the late 1880's and Father Egedi's grammar of the language was translated and published by S.H. Ray (1912a). Steinkraus and Pence (1964:6-7) give a listing of printed materials available in Fuyuge to 1964.

Village lists and old names used to refer to parts of Fuyuge, Tauade, and Kunimaipa are to be found in Dutton 1973.

2.9.5.2. *KOIARIAN LANGUAGES*

These stretch across Papua from the coast around Port Moresby almost to the sea on the north coast at the eastern end of the Hydrographers Range. The Koiarian language family was established by the present author in 1969. In that study (Dutton 1969a) I showed that the family consisted

of six languages - Koita, Koiari, Mountain Koiari, Barai, Ömie (formerly Aomie), and Managalasi - which fall into two sub-families of three languages each - the Koiaric and Baraic. Generally speaking, Koiaric languages are to be found on the southern slopes of the Owen Stanley Range and the Baraic on the northern side but there are representative groups of each on both sides of the range.

2.9.5.2.1. Koiaric Sub-Family

The greater part of this sub-family is located in the Central District stretching east and west from Port Moresby along the coast and inland to the Owen Stanley Range along the valleys of the Laloki, Goldie, Brown and Vanapa River systems. A much smaller section is located in the Northern District in a thin strip between the Yodda River (Upper Mambare) and the dividing range and in three villages in the headwaters of the Kumusi River. The area is sparsely populated by speakers of the three languages Koita (between the Laloki River and the coast), Koiari (on the Sogeri Plateau and the foothills of the Astrolabe Range) and Mountain Koiari (elsewhere).

2.9.5.2.1.1. *Koita and Koiari*

Koita and Koiari are closely related in all aspects of their structure. Both are represented by two dialects each, though the Koita dialects are less divergent than the Koiari ones. The division between east and west Koita occurs roughly with the inland 'end' of Fairfax Harbour. East Koita thus includes Baruni and Kilakila while West Koita includes Roku and Gorohu. These dialects share approximately 87% basic vocabulary with each other.

The Koiari dialects are also eastern and western. East Koiari is spoken in a small arc around the eastern end of Sogeri Plateau from Kailakinumu village through Ogotana, Futinumu, Agitana, Senunu to Seme and Dagota on the coastal side of this plateau. This dialect shares approximately 82% (average) basic vocabulary with the western Koiari dialect which occupies the remainder of the Sogeri Plateau (around Fakonama and Vesilogo), the southern foothills of the Astrolabe Range (around Labuka) and part of the middle Laloki Valley (around Mesime). The eastern dialect is more diverse than the western and the lexical evidence suggests a splitting of this dialect into two sub-dialects: north-eastern and south-eastern.

2.9.5.2.1.2. *Mountain Koiari*

Mountain Koiari consists of six dialects - southern, central, western, northern, eastern and lesser-eastern. The southern dialect covers an elongated area down the Goldie River from Naoro across to Motumotu on the Brown River. It is a buffer dialect between other Mountain Koiari dialects and Koiari to the south, and its vocabulary shows the result of this contact. It includes the tribes of Varagadi, Uberi, Moroka, Herei and Eava. The southern dialect is markedly different from its northern counterparts and bears the least cognatic correspondence with any of them. Phonologically it is divergent within itself so that at Naoro one finds that peoples living on opposite sides of the village 'street' speak apparently quite different dialects. This is so because Herei has a glottal stop corresponding to the voiceless stops t and k in Eava speech. The central dialect is the largest and occupies the small river valleys of the Brown River, stretching from Madilogo north to Efogi and Kagi and west to Manumu and possibly Biniga. It is most closely related to the eastern and northern dialects and not quite as closely to the lesser-eastern and western dialects. This latter occupies the Vanapa River valley from Boine and Suku to Kerea, Fodu and Badiloho. The northern dialect occupies the southern bank of the Yodda River valley in the foothills of the Owen Stanley Range in the Northern District. It stretches from Kanga in the west through Kovelo (near Kokoda) to Alola and Isurava in the Yora River valley just north of the Gap. This dialect shares only 73-75% basic vocabulary with the eastern dialect which is spoken in the villages of Awoma and Tetebe in the headwaters of the Kumusi River. This latter dialect shares 82-85% basic vocabulary with the last and smallest of the Mountain Koiari dialects, lesser-eastern, around Kovio further up the same river valley.

2.9.5.2.2. Baraic Sub-Family

The greater part of this sub-family is to be found in the Northern District south and west of the Hydrographers Range to the Owen Stanley Divide. Part of the sub-family extends across this range into the Central District in the north-west of the Rigo Sub-District.

2.9.5.2.2.1. *Managalasi*

The largest of the languages is Managalasi which is spoken in a relatively densely populated basin around the headwaters of the Pongani and Bariji Rivers. This language apparently consists of a large number of lexical dialects (10?) of which only five have been surveyed. In the east it abuts on to the Baruga language (Binanderean Family) and the

dialect around Ondoro shows considerable lexical borrowing from this language suggesting long contact with or dominance by the Baruga. In the south-west it has a common border with Barai between the villages of Tahama and Kwarue.

2.9.5.2.2.2. *Barai*

The Barai language extends southwards from the Managalasi border in a large arc through the headwaters of the Moni River (Upper Musa) across the Owen Stanley Range into the Mimai Valley (Upper Kemp Welch) and thence westward up the Laba (or Adai) tributary of the same stream. In the west it has a common border with Koiari at Doe village, and in the south with the Kwalean language family and to the east with the Manubaran and Yareban Families. It is also represented at the two villages of Emo River and Ejaro (and part of Ujilo) in the Kumusi valley. The Barai language also consists of a large number of dialects (eight) and at least two more were known to have existed until the early twentieth century - Seramina and Uala. At first contact Barai speakers from south of the Barai-Managalasi border were reported to be able to understand the Managalasi language from much further east around Numba.

2.9.5.2.2.3. *Ömie (or Aomie)*

The Ömie (or Aomie) inhabit the Kumusi valley at Namanadza immediately north of the Barai village of Emo River, and the Mamama valley which is an east bank tributary of the Kumusi south-west of Mt Lamington. There are at least two dialects - one in the Kumusi and one around Asapa. A third probably exists around Gora and Bomahouji but no linguistic material has been collected from this area.

Summer Institute of Linguistics teams are now located in four of the languages of this family - Barai, Ömie, Managalasi, and Mountain Koiari. A fifth team was located in Koiari but has since left the Institute. These teams have published two papers on Ömie and Managalasi (see Austing 1974 and Parlier 1964 respectively). Descriptive sketches of Mountain Koiari, Barai, Ömie, and Koita are in Dutton, ed. 1975b. Koiari is described by me in Dutton 1969b. For Barai see also Olson 1973.

Healey (1973:53-4) gives a listing of literacy materials published in Managalasi. Other manuscripts are in the hands of the Summer Institute of Linguistics, New Guinea Branch.

Village lists and old names used to refer to parts or wholes of the Koiarian languages are given in Dutton 1969a; 1973.

2.9.5.3. *KWALEAN LANGUAGES*

The Kwalean Family consists of two small languages, Humene and Kwale and probably also once included a third, Mulaha (or Iaibu) that is now extinct.

Humene and Kwale are closely related, sharing between 65% and 74% of basic vocabulary. Humene is spoken around the eastern lower slopes of the Sogeri Plateau and adjacent coastal plain between the Motu villages of Gaire and Kapakapa. It consists of two dialects: Lagume (around Gobuia) and Humene (around Manugoro). The principal village of Humene is Manugoro, which is a composite village of Zareba, Muzaha and Humene groups. The former two are remnants of groups of people who once controlled the land around where Manugoro is now situated and once spoke Mulaha (or Iaibu), short vocabularies and some sentences of which were published by English (1901) and Ray (1907:387-412). These represent slightly different variants of the same language which is generally referred to as Mulaha. Ray's material was in the Mulaha variant and English's in the Iaibu. About 28% and 22% of the basic vocabulary of present-day Manugoro and Kwale villages respectively is cognate with Mulaha vocabulary provided by English (1901).

Kwale is a small language occupying the area around the lower reaches of the Hunter and Musgrave Rivers. It consists of two dialects: Garia (around Geresi) and Kwale (around the village of the same name).

Not much is known about the grammar of either Kwale or Humene except for the notes I published in Dutton 1970. According to Ray (1929:71) a grammar of Kwale was compiled by Dr Strong from notes collected by Rev. H.P. Schlenker, but as far as is known this has not been published. No literature has been published in the Kwalean languages.

Village lists and old names used to refer to parts or wholes of the Kwalean languages are given in Dutton 1970; 1973.

2.9.5.4. *MANUBARAN LANGUAGES*

The Manubaran Family also consists of two closely related languages - Doromu and Maria. These share about 60% basic vocabulary. Very little is known about the structure of the Manubaran languages, except for the notes I published in Dutton 1970, and nothing has been published in any of them.

2.9.5.4.1. Doromu

Doromu is spoken by a small scattered population living in the headwaters of the Uma or Margaret (tributary of the Kemp Welch) and Ormond Rivers west of Mt Brown. It consists of three dialects: Kokila (around Bareika), Doromu (around Aramaika) and Koiriko (around Lofaika).

2.9.5.4.2. Maria

Maria is a relatively large non-Austronesian language for this part of Papua. It is spoken by a scattered population along the mountainous southern slopes of the Owen Stanley Range from Mt Brown to Marshall Lagoon on the coast in the Abau Sub-district, in the tributary valleys of the Ormond and Imila Rivers. A few speakers also live on the northern slopes of Mt Brown in the village of Imuruwake in the upper Musa (or Moni) River valley. Around Marshall Lagoon Maria speakers seem to have controlled land on both sides of the lagoon. On the east this territory extended down the western side of the range of hills forming the watershed of the Bomguina River to a point in the hills just inland of Kapari-Hula. Maiagolo is now the principal village in this area. It is marked as Imila on some maps and is situated about ten miles inland up the river of the same name on a hill overlooking Marshall Lagoon. Two other small hamlets of Kani?aba (about two hours' walk south of Maiagolo where the old village of Ani?aba was marked on some maps) and Wounaba (in the hills behind Maiagolo about three hours' walk inland) are censussed with Maiagolo. These three villages claim to speak be?anivia. On the western side of Marshall Lagoon Maria speakers are to be found at Uderi, a small hamlet south-west of Paili Plantation on the lower reaches of the Gonema Oru River. In this village Maria is being replaced by Sinagoro and Keapara as villagers marry into Bukuku and Kelerakwa villages nearby. A wordlist described by me in Dutton 1969a shows that the Uderi spoke a slightly different variant of Maria from other groups. It is possible that Keagolo (and perhaps the old village of Thaibogo marked on some maps) is also an ex-Maria village. None of my informants really knew what was spoken there though some claimed it was Sinagoro. It has therefore been temporarily listed among the Sinagoro villages. I estimate that Maria consists of seven dialects: Didigaru (centred around Maranomu No.1), Maria (centred around Maria), Gebi (centred around Ora'ia), Oibu (?) (centred around Nenemakomana), Amota (?) (centred around Kakiakomana), Imila (centred around Maiagolo), Uderi (centred around Uderi).

Village lists and old names used to refer to parts or wholes of the Manubaran languages are given in Dutton 1970; 1973.

2.9.5.5. *MAILUAN LANGUAGES*

These form a family which is located wholly on the southern side of the Owen Stanley Range except for the small section of the Bauwaki language in the north-west corner around Mt Clarence. There are six member languages: Magi (or Mailu), Domu, Morawa, Binahari, Bauwaki and Labu. These include Ray's (1938:157-59) Domu, Binahari and Bauwaki Groups but

not his Magori Group which is a "mixed" language but basically Austronesian - see chapter (II) 4.5.2.

Mailuan languages share around 50% basic vocabulary with each other, though they have also borrowed from neighbouring Yareban and Austronesian languages. Grammatically they appear to be very close, except Bauwaki which seems to have mixed Mailuan and Yareban features. None of the languages except Magi (or Mailu) has been studied or recorded in any detail.

Village lists and population figures for Mailuan languages are given in Dutton 1971a; 1973.

2.9.5.5.1. Magi (or Mailu)

This is one of the best known non-Austronesian, i.e. Papuan, languages of the south-eastern part of Papua.[7] It is spoken in villages along the coast from Baramata No.4 in Sandbank Bay in the west to Gadaisu in mid-Orangerie Bay in the east, except where interrupted by the Morawa and Magori languages. Today the language is variously referred to as Magi or Mailu. Originally Magi was the more inclusive term which referred to the people as a group with Mailu limited to the island of the same name. Today, however, the term Mailu is being extended in meaning to cover the whole area especially amongst the United Church villages.[8]

There are nine dialects of Magi which are defined and discussed in Thomson 1975b - See Map 2. The language has been most thoroughly studied by missionaries of the former London Missionary Society (now part of the United Church) and grammars of the language have been published by Saville (1912) and Thomson (1975a). There are also some quite extensive vocabularies by Saville (1935a,b) who also prepared a translation of the New Testament which has recently been revised by Thomson and Lioro but not yet published.

2.9.5.5.2. Domu

This small language is spoken in the census villages of Dom, Merani and Tutubu on the south coast between Cape Rodney and Baramata (excluding Otomata) and inland in the foothills drained by the Auro and lower reaches of the Bomguina Rivers. Dom includes the lesser villages of Rigua, Unau, Gonubu and Abuia. Rigua is said to be originally from the hills north-west of its present location but south of Kani?aba and is said to have spoken Lamagu, a dialect of Maria - see subsection 2.9.5.4.1. above. Merani includes the old villages of Kaura and Iaba (or Eaba).

Domu is most closely related to Bauwaki to the north-east but also shows connections with Abia (of the Yareban Family) immediately

to the north. This language covers Ray's (1938:157) Domu and Merani subdivisions of his Domu Group.

2.9.5.5.3. Morawa

This language occupies the coastal territory east from Sandbank Bay around Cloudy Bay almost to Dedele Point. It is spoken in the four present-day villages of Badubadu, Duramu, Manaua (= new Ganai), and Si'ini (= new Aniado). It covers Ray's (1938:157) Morawa and Lauuna subdivisions of his Domu Group.

2.9.5.5.4. Binahari

This language is to be found on both sides of a range of hills running inland from Cloudy Bay in a north-easterly direction towards the mountains country between Mounts Suckling and Dayman in the main range as far as the headwaters of the Liba River. This range separates the Baubauguina (guina = *river*) River basin on the west from that of the Amina (or Robinson) River on the east. In Dutton 1971a:24 I suggested that Binahari consists of two dialects: (1) Neme (from nemeda'a *neme speech* but usually spelled Nemea) spoken by 172 villagers in the two villages of Oio (or Oi'o) and Darava No.2 immediately inland of Robinson River Planatation and a few others who have married into Magaubu village on the coast and (2) Ma (from mada'a *ma speech* - which is more extensive (population 598) and covers the following present-day villages: (a) Apaeva (in the Baubauguina River plantation area); (b) Bam and Segili on the east side of the range; and (c) Doma (which includes earlier villages of Orumani, Mada, Uihaia (or Wahea) and Basiabaga) in the Liba valley at the northern end of the range. Dr Thomson thinks, however, - see Thomson 1975b - that these two dialects may be better regarded as separate languages since they are quite diverse lexically. However, without further evidence obtained by visiting the area it is difficult to say. Note, however, that the name Binahari used for the language by me is that used by Ray (1938:159), although informants were puzzled by it and could not identify it as being either a group or dialect name.

2.9.5.5.5. Bauwaki

Formerly this language was spoken in small hamlets scattered across an area extending from the Mori River through the headwaters of the Gadoguina (or Eau) and Liba Rivers into the Keveri Valley along the Adau River on the northern side of Mt Clarence as far as the gorge and northern wall of the main range eastwards along the Owen Stanleys to the vicinity of Mt Suckling. Now, however, the population is concentrated at Amau on

a tributary of the Mori on the southern side of the main range. A minority still live in the Keveri Valley at Paiwi and at Bau and Velavelai in the headwaters of the Liba River. A few have also moved to Mori from Amau.

Bauwaki is a kind of bridge language between the Mailuan and Yareban Families. It shows just slightly greater basic vocabulary agreements with Domu (66%), of the former, than with Abia (54-59%), of the latter. Grammatically it appears to be a mixture of both Mailuan and Yareban elements. This was true also of their pre-European-contact culture generally which seems to have been a combination of elements from cultures on both sides of the range.[9] According to informants at Amau the language is pronounced bavake meaning *true* (ba) *speech* (vake).

Village lists and old names used to refer to parts or wholes of Mailuan languages are given in Dutton 1971a; 1973.

2.9.5.5.6. Labu

This is a very small language spoken only in the village of the same name about ten miles inland up the valley of the Bailebo River - see Map 2. It has previously been suspected of being either Magi or Magori (see Dutton (1973:45)) but Thomson (1975b) has recently collected further data on it which suggest that is is a separate language most closely related to Magi.

2.9.5.6. *DAGAN LANGUAGES*

There are eight Dagan languages which constitute a large family stretching across the very mountainous south-east corner of lower mainland Papua. From north to south these languages are: Onjob (160), Maiwa (1298?), Jimajima (542?), Daga (or Dimuga) (5326?), Mapena (274), Gwedena (or Gwede) (2161?), Ginuman (or Dime) (775?), Sona (1661?).

Lexically this family is quite diverse - more diverse in fact than the languages appear to be grammatically. The family embraces Ray's (1938:160-62) Dimuga, Gwoira, and Maneao Groups. None of the languages has been recorded or studied in any depth except Daga (or Dimuga). Village lists and population figures for Dagan languages are given in Dutton 1971a; 1973.

2.9.5.6.1. Onjob

Onjob is the smallest of the languages of the Dagan Family and is well separated from the rest of them. It is spoken in only two small villages, Koreaf and Naukwate, a few miles inland of Wanigela Anglican Mission station in Collingwood Bay. According to Medaris (1969) these

two villages belong to two social groups, Onjob and Aiso respectively. The latter is said to have originated from near Karisoa, migrated to Keroroa, thence to Waijug and Naukwate. They are said to have spoken a "language" called Aisoro, different from that spoken by the Onjob group who came from the Kwin River area and were given land by the Wanigela. If there once was a language (as distinct from dialect) difference between these two groups it is no longer extant though there are nevertheless slight phonological differences between the two communalects which may or may not be related to a previous language difference.

2.9.5.6.2. Maiwa

Parts of this language have previously been referred to as Maneao, Pumani, Kwateva and Pue.[10] It covers the northern slopes and foothills of the Maneao Range eastwards from Mt Tantam around to the valley of the Ruaba River and reaches the coast at Baiawa in Moi Biri Bay. Maiwa consists of at least four dialects (from west to east): (a) one around Biniguni including villages in the upper reaches of the Rakua and the western tributaries of the Kwagila. Daga speakers are also known to be living in the Biniguni area. The village of Budumaga is said to speak slightly differently from other Biniguni but was not surveyed; (b) a second around Wapon including villages at the foot of the Maneao Range and in the eastern tributaries of the Kwagila River; (c) a third one around Pumani which includes villages in the valleys of Yome Creek around Kwinau Mission and Pumani airstrip marked on some maps; and (d) a fourth one which stretches from the coast at Baiawa inland in a thin strip to the Ruaba River.

2.9.5.6.3. Jimajima

This small language extends along the coast from just east of Moi Biri Bay almost to Posa Posa Harbour on the Cape Vogel Peninsula and inland across the butt of the peninsula down the lower reaches of the Ruaba River. It does not include the two would-be Doga language speaking villages of Guru and Geragerasina. The western Jimajima villages are often mixed with Maiwa speakers nearby. This probably accounts for the fact that informants recognize two varieties of Jimajima speech - one in the coastal western section; the other elsewhere. Insufficient material has been collected to verify this felt distinction.

2.9.5.6.4. Daga (or Dimuga)[11]

This is one of the largest non-Austronesian languages in South-East Papua. It is spoken by villages living on both sides of the Main Range

south of a line joining Mounts Tantam, Dayman, Gwoira and Simpson. This area is drained by three main streams - the Bonua (which rises near Mt Tantam and drains into Table Bay on the south coast); the Bailebo (whose two main tributaries the Tavenei and Ulumanu rise under Mt Baratun and also drain south into Table Bay); and the Ruaba (which drains the northern slopes of a basin formed by Mounts Dayman, Baratun and Simpson and eventually reaches the sea in the heel of Goodenough Bay). Most of the Daga population is to be found concentrated in the latter basin especially in the valley of the Agaun, one of the principal tributaries of the Ruaba. Lesser populations live in the upper reaches of the Tavenei, Ulumanu and Bonua Rivers. A few villages are also to be found in the headwaters of the Kutu River which rises under Mt Simpson and flows eastwards into Goodenough Bay near the Government station at Rabaraba.

Villages in the Tavenei valley are often referred to as the Nunu villages, and those in the Ulumanu as the Keneni. The former are most closely related to those in the Agaun valley across the range.

The Daga language apparently consists of several dialects whose boundaries are not yet clear but which it is hoped Mr and Mrs J. Murane of the Summer Institute of Linguistics, who have been studying the language since 1963, will be describing in some detail later.

Linguistic studies of the language have been published by the members of the Summer Institute of Linguistics just mentioned - see J. and E. Murane 1967; 1972 and E. Murane 1974 - and considerable literacy materials (see Healey 1973:44) have also been prepared in it. Other unpublished materials are held by the Summer Institute of Linguistics, New Guinea Branch.

2.9.5.6.5. Mapena

This is another small linguistic group around Mt Gwoira. On present evidence it is most closely related to Daga lexically although informants seem to regard it as belonging to Maiwa. It shows borrowing from the surrounding languages of Daga, Maiwa, Jimajima and Gwedena. Incomplete linguistic material was collected from only one informant from Ruabo village. The following villages are said to belong to the Mapena or Gwoira group: Bemberi, Kwabu, Amako, Girim, Daneam and Ruabo. Cf. Ray 1938:160. These are censussed at Bemberi. The population is given as 274.

2.9.5.6.6. Gwedena (or Gwede)

This language is spoken in villages located along the coast in the heel of Goodenough Bay and inland amongst the impressively broken, steep,

knife-edged eastern slopes of the high country between Mounts Gwoira and Simpson. This area is drained by several short swift rivers and creeks, notably the Kubu, Romesi, Kiromara and Ugu.

There are two dialects of Gwedena - one in the upper reaches of the Ugu and the other spoken over the remainder of the area. No material has been published in the Gwedena language. The area is served by the Anglican Mission but the language of the church is Wedau. Gwedena appears to be the language referred to as Umanakaina in Capell (1962:164 and Map XIII).

2.9.5.6.7. Ginuman (or Dime)

This small language stretches in a narrow strip from Mt Simpson to the coast at Naraka and occupies the valley of the river of the same name. The language has not previously been identified.

2.9.5.6.8. Sona

This language is spoken on both sides of the Main Range in river valleys radiating from Mt Thomson. No material was collected from villages on the southern side of the range. Information on them was obtained from informants on the northern side and from Dr N. Thomson.[12] Parts of Sona have previously been referred to as Puduwana and Wadewinda by earlier writers.

Village lists and old names used to refer to parts or wholes of Dagan languages are given in Dutton 1971a; 1973.

2.9.5.7. *YAREBAN LANGUAGES*

The Yareban Language Family stretches from the southern side of the middle Bariji River in the north, down through the upper and middle reaches of the Musa (or Moni) River, across the Owen Stanley Range into the valleys of the Mori River on the southern slopes of the same range. Its constituent languages are (from north to south): Bariji (256), Yareba (750), Sirio (363?), Doriri (571?), and Abia (579?).

The relationship (in terms of shared basic vocabulary) between these languages and various village communalects within them varies between about 44% and 70%. The family includes Ray's (1938:155-56) Abia and Upper Musa Groups except for his Saroa subsection (p.157) which is partly Baruga and partly Dogoro.

None of the languages has been recorded or studied in any depth except Yareba.

2.9.5.7.1. Bariji

This is spoken in the following small villages along the southern bank of the river of the same name: Biriri, Gewoia, Manana, Samaga No.1, Samaga No.2, Toma, and Yawobo. The language corresponds to Ray's (1938: 156) Kororo subsection of his Upper Musa Group. It should not be confused with Wilson's (1969a:66,68) Bareji language of the Binanderean Family.

2.9.5.7.2. Yareba

This is spoken around the upper and middle sections of the Musa River down as far as the gorge through which it passes in the Didina (or Didana) Range. Latest evidence (Weimer 1974: Personal Communication) is that it is a single dialect language which covers Ray's (1938:156) Dibogi and Bori subsections of his Upper Musa Group but excludes his Kororo subsection as just noted in subsection 2.9.5.7.1. above. It is spoken in the following villages: Bibira No.1, Bibira No.2, Domara, Gobera, Moro, Obeia, and Safia No.1.

The language has been studied by members of the Summer Institute of Linguistics since 1963 - see Weimer (1972; 1975) and Weimer, H. and N. (1970; 1972; 1975) - who have also prepared literacy materials in it - see Healey (1973:62).

2.9.5.7.3. Doriri

This is a small language spoken in the northern slopes of the Owen Stanley Range around Mt Brown down to the Moni River west of Foasi Creek. According to Mr J. Parlier (1974: Personal Communication) of the Summer Institute of Linguistics who collected further information from the area in 1973, it is spoken in villages associated with the following census points: Awala, Avakaro, and Safia No.1. The language is very closely related to Abia to the west and south. It covers Ray's (1938:156) Moikoidi (Doriri) subsection of his Abia Group. The location of Doriri is shown on Map 3.

2.9.5.7.4. Sirio

This is a small previously unreported language spoken in the headwaters of the Musa (or Moni) River in the villages of Namudi and Sibia. It has been reported and defined by Mr J. Parlier (1974: Personal Communication) of the Summer Institute of Linguistics who collected some information on the area in 1973. The location of Sirio is shown on Map 3.

2.9.5.7.5. Abia

This small language is spoken on both sides of the Owen Stanleys - on the northern side in small villages on ridges and in valleys of the Foasi and Domara Creeks running down to the Moni; on the southern side most speakers are to be found in the village of Ianu on the middle Mori where a Roman Catholic mission station was established eight years ago. Previously (until about twenty years ago) most were living further east at Amau as a section of the Kwato Extension Mission station. There they occupied a site on the western bank of the Amau, a tributary of the Mori, until several of their number died suddenly. The remainder fled fearing foul play. Some are still living in scattered houses, or return regularly for short periods to former villages (e.g. Debana, Domoi, Lalai etc.) in the headwaters of the Mori.

Abia consists of at least three dialects, and probably as many as five. Two are spoken at Ianu - one by those from the former villages in the headwaters of the Mori; the other (showing closer contact with Domu and Bauwaki languages of the Mailuan Family south and east) by those from the old village of Buniabura to the north-west of Amau. A third is represented on the northern side by the village of Auwaka. Others are probably to be found at Jari and related villages where informants say the Buari and Oiwa groups are now mainly living, and at Doma and Arai'ia in the headwaters of Domara Creek.

Abia corresponds to Ray's (1938:156) Buari, Okaudi, Doriviata (Doriaidi), and Oiwa subsections of his Abia Group.

Village lists and old names used to refer to parts or wholes of Yareban languages are given in Dutton 1971a; 1973.

2.9.5.8. *BINANDEREAN LANGUAGES*

The Binanderean Language Family was set up and defined by Wilson (1969a) and was extended to a stock through the inclusion of the Guhu-Samane family-level Isolate by Hooley and McElhanon (1970). Further information on many of the languages in the eastern half of the family was provided by Dutton (1969a, 1971a, 1973). The existence of the family had been indicated earlier by several authors, e.g. Strong (1911a), Ray (1938), Capell (1962) without its full extent being known at that time.

The Binanderean Stock (61,500)[13] is composed of the following languages and language groups:

1.	Guhu-Samane family-level Isolate		4000
2.	Binanderean Family		57000
	Suena	2000	
	Yekora	300	
	Zia	3300	
	Binandere	3000	
	Ambasi	1200?	
	Aeka	2000	
	Orokaiva dialects	25000	
	Hunjara	4265?	
	Notu(Ewage)	10000	
	Yega (Okeina)	900	
	Gaina	128?	
	Baruga	1051?	
	Dogoro	119	
	Korafe	4194?	

These languages extend along the northern coast and immediate hinterland area from the Maiama River in the south-eastern corner of the Morobe District in the west to around Cape Nelson in the east. They are generally very closely related except that between the Family and the Isolate, Guhu-Samane, which is in the middle range of stock-level relationship.

Detailed studies of member languages of the Stock have been carried out by King (1927), Ray (1907), Capell (1969), Healey *et al.* (1969), and members of the Summer Institute of Linguistics who have been located in five of its member languages.

2.9.5.8.1. Guhu-Samane

This is spoken by some 4000 villagers around the census points of Aihasa, Gimini, Iariva, Juwera, Kakeipo, Kiro, Oibo, Sedema and Upupuro in the upper reaches of the Waria River near Garaina. There are two villages - Eipa and Zinaba - down near the coast on the Maiama River and another - Paewa - at the mouth of the river of the same name. The dialectal situation is unknown but according to Hooley and McElhanon (1970: 1076) Paewa villagers speak slightly differently from the remainder.

Guhu-Samane has been well studied by members of the Summer Institute of Linguistics - see Richert, E. 1975 and Richert, E. and M. 1972 - who have also produced literacy materials in the language - see Healey 1973:48.

2.9.5.8.2. Suena, Yekora, Zia

These are three small languages located in the south-eastern corner of the Morobe District.

2.9.5.8.2.1. Suena is the only language that has been studied in any depth. Members of the Summer Institute of Linguistics have been located in this language since 1964 and have produced linguistic sketches of various aspects of it - see Wilson (1969b; 1969c), a grammar (Wilson 1974), as well as various literacy booklets - see Healey (1973:57).

The language itself is spoken in nine (mainly coastal) villages (Amoa, Bosadi, Eware, Gori, Kobio, Maiama, Mo and Wabazeira) between the mouth of the Maiama River in the west and the village of Eware just east of the Morobe Patrol Post in the east.

2.9.5.8.2.2. Yekora is spoken in three villages - Sapa on the coast just east of Eware, and Ana and Posei in the headwaters of the Mo River.

2.9.5.8.2.3. Zia is the largest of the three languages and consists of at least two dialects - Zia Proper and Mawai. The former is spoken in a number of villages around Hercules Bay between Kobo village at the mouth of the Waria River and Eia village at the mouth of the river of the same name and inland up the lower reaches of the Waria River as far as Pena village. The Mawai dialect is spoken in several villages around the census points of Iema, Gobe, and Agutami in the middle reaches of the Waria River.

2.9.5.8.3. Binandere, Aeka, Ambasi

These three languages occupy the north-western corner of the Northern District.

2.9.5.8.3.1. Binandere is the largest and is spoken around the lower reaches of the Eia, Aikora, and Mambare Rivers and in the village of Kurereda at the mouth of the Kumusi River. This language has also been well studied - see King (1927), Ray (1907:365-75) and Capell (1969).

2.9.5.8.3.2. Immediately south of Binandere is Aeka which is spoken in a collection of villages along the middle and lower reaches of the Opi and Kumusi Rivers.

2.9.5.8.3.3. East of Aeka and Binandere is Ambasi which is spoken in coastal or near-coastal villages clustered around the mouth of the Opi River between Bekabari in the west and Katuna in the east just short of the mouth of the Kumusi River.

Village lists for these languages are given in Dutton 1973.

2.9.5.8.4. Orokaiva

Orokaiva is the name given to the large language spoken in numerous inland villages around Popondetta. It has never been properly surveyed but is known to consist of a number of tribal groups or sections, chief amongst which are Waseda, Sohe, and Dobuduru. Orokaiva culture has been well described by Williams (1928; 1930) and Healey *et al.* (1969) have sketched some aspects of Orokaiva grammar. The language is presently being studied by members of the Summer Institute of Linguistics who entered the language in 1971.

A suggested village list is given in Dutton 1973.

2.9.5.8.5. Hunjara

Inland of Orokaiva is Hunjara which is spoken in a large number of villages in the headwaters of the Kumusi and Mambare Rivers. The language extends inland as far as Kokoda and has a common border with Mountain Koiari of the Koiarian Language Family.

A suggested village list is given in Dutton 1973.

2.9.5.8.6. Notu (or Ewage)

This is the second largest Binanderean language. It is spoken in a long series of mainly coastal villages between the mouth of the Kumusi River in the west and the Pongani River in the east except for several Yega and Orokaiva villages around Cape Killerton and Cape Sudest respectively. Notu has been spread across Dyke Ackland Bay by emigrants from Oro Bay (west of the Pongani River) settling around Porlock Harbour in Gobe.

This language is also being studied by members of the Summer Institute of Linguistics who entered the language in 1973.

A suggested village list is given in Dutton 1973.

2.9.5.8.7. Yega (or Okeina)

This is a small language which is apparently represented by two different sections - one around Cape Killerton in the west and another around Porlock Harbour near Tufi in the east. Both are said to be related but no one has established this linguistically. Those around Cape Killerton are generally referred to as Yega and those around Porlock Harbour as Okena or Okeina. Okeina is or was spoken in Ako and associated smaller villages, Mafuia and Oreia (now abandoned). Yega is said to be spoken in Beporo and Surira.

2.9.5.8.8. Gaina, Baruga, Dogoro

These are three small languages spoken around and inland of Dyke Ackland Bay.

2.9.5.8.8.1. Gaina is spoken in the villages of Iwugi, Nembadi, Orala, Sasaru, Wai'ie on the west bank of the Lower Bariji River between Managalasi of the Koiarian Family in the west and the Baruga in the east. This latter is still of uncertain extent but for present purposes is taken to include all villages along the lower Musi River right down to its mouth. These villages include Dove, Embessa, Foru No.1, Foru No.2, Gombara, Gugumu, Guruguru, Kakasa, Karaisa (part only), Karisoa, Kinjaki, Korala, Ovesa, Sanada, Sariri, Songadi, Taruma.

2.9.5.8.8.2. Baruga speakers surround the Kosirava dialect of Maisin spoken in the swamps of the lower Foaru River except in the north where the two Dogoro villages Bendorada and Sebaga are found on the coast in mid-Dyke Ackland Bay.

2.9.5.8.9. Korafe

This is spoken by some 4200 villagers scattered around the rugged coast of Cape Nelson. It consists of two dialects - Yega (or Mokorua) and Korafe Proper. The former occupies two sections of coast, one around Cape Nelson and including the villages of Gavida, Kanaweto, Koruwe, Sinei, Teniaru, and Tumina, and one along the coast east of Porlock Harbour which includes the villages of Angorogo, Bambiti, Foroma, Ilamaroro, and Kaparuru. Separating these two sections is a group of Austronesian-speaking Arifama-Miniafia villages. Some Mokorua speakers are also said to reside at Siu mentioned below.

Korafe Proper is spoken in villages south of Cape Nelson as far as Siu where again it has a common border with Arifama-Miniafia.

Korafe Proper is at present being studied by members of the Summer Institute of Linguistics who entered the language in 1972. Some of the results of this work have already been published or been drawn up for publication - see Farr, J. and C. 1974; 1975.

Village lists are given in Dutton 1971a; 1973.

APPENDIX

Outline History of Contact with and Recording of Papuan Languages in South-Eastern Papua New Guinea

1874 London Missionary Society missionary Rev. W.G. Lawes arrives in Port Moresby to supervise the development of the young mission.

1877 Rev. J. Chalmers arrives. Remains to do wide pioneering and exploratory work up and down the coast from Port Moresby and inland. Records local Papuan languages. First specimens are of Koita, Koiari, Mountain Koiari, Humene, and Fuyuge dialects, but most of these not published till 1888 and 1907.

1880 O. Stone publishes first Koita and Koiari vocabularies.

1885 The French Missionaries of the Sacred Heart (M.S.C.) arrive in Papua and establish a head station at Yule Island. In the following years the mission extends inland and establishes outstations amongst Fuyuge, Tauade, and Kunimaipa-speaking groups. Missionaries learn the local languages and prepare materials in them for mission and education purposes. Grammars also prepared but most of these are still in manuscript form. Father Egidi's grammar of Fuyuge translated, edited and published by Ray in 1912. Some anthropological notes also published by Fr. Egedi (or Egidi).

1888 R. Cust collects together and publishes a selection of the vocabularies gathered by Chalmers from Kabana (Fuyuge), Favele, Maiari, Eikiri (all Koiari), Meroka, Kupele (both Mountain Koiari) and Manukolu (Humene).

1890 T. Bevan publishes map showing distribution of the following Papuan dialects: Koitapu, Sogeri, Favere, Koiari, Kubere, Meroka, Iovi, Keremu, and Mailu.

Vocabulary lists collected by Government Officers and others begin to appear in the *Annual Reports for British New Guinea*. First specimens are of the "language of the Upper St. Joseph's River", Koiari Goto, and Koita Ga. By 1900 all presently identified language families have been sampled but publication continues as new areas are contacted and brought under Government control.

1891 Anglican Mission establishes mission station at Wedau. Rev. Copland King begins work on Wedau and later on Binandere as the mission extends its work along the north coast.

1892 S.H. Ray suggests a classification of languages of British New Guinea based on published materials. Divides languages into Melanesian and Papuan with a mixed type, Melano-Papuan in the islands east of the mainland. The communalects then recorded are divided into the following groups: Koiari (Koiari, Eikiri, Koita, Maiari, Favere, Kupele, Meroka), Kabana, Manukolu, and Domara (Domara, Mailu). A short comparative vocabulary is included. This account reprinted in 1895.

1895 S.H. Ray publishes an extensive Comparative Vocabulary of dialects of South-East Papua using the Melanesian-Papuan distinction and groups made in 1892.

1907 S.H. Ray published surveys of Papuan languages in Central, South-East and North-East Papua, in which he begins to classify dialects into languages and to comment on their relationships. These surveys include the first grammatical notes of Koita and Binandere, and comparative wordlists for 31 reported "dialects" obtained from published wordlists already referred to and some unpublished lists collected by himself, Rev. Chalmers, Rev. Lawes, Rev. King, and a Mr Walsh.

1911 Dr W.M. Strong surveys languages of the North-East and adjoining divisions. Includes new information on inland languages and recognizes relationship between many of these languages and those in other parts of Papua. Suggests groupings which approximate to family-level ones today. These languages resurveyed by Wilson (1969a) and Dutton (1969; 1971).

1912 S.H. Ray translates, edits and publishes Fr. Egidi's grammar of Fuyuge in Williamson 1912. Also includes notes on the classification and distribution of Fuyuge, Afoa (= Tauade), and Kovio (= Kunimaipa). Dr W.M. Strong adds further notes on Afoa and Kovio.

London Missionary Society missionary W.J. Saville publishes a grammar of Mailu (= Magi). Prepares vocabulary and other materials which were never published but which survive in mimeographed form - see Saville 1935a,b.

1926 R.W. Grist surveys languages in the Abau area of the Central District. Provides new information of Mailuan and Yareban languages.

P.W. Schmidt surveys literature to date and draws up atlas of languages.

1929 S.H. Ray surveys available materials again and classifies languages of the Central District into groups and sub-groups which correspond largely to present-day languages and dialects. These languages restudied by Dutton (1969, 1970).

1930 S.H. Ray surveys available materials on languages in the Eastern and South-Eastern Divisions of Papua and classifies them into groups and sub-groups which correspond largely to present-day languages and dialects. These languages restudied by Dutton (1971a).

1942 Japanese invade Papua.

1943 A. Capell publishes his Ph.D. study of the linguistic situation of South-East Papua which includes some observations on Papuan languages and family groupings.

1946 Return of civil administration to Papua. Heightened Australian (and world) interest in Papua New Guinea leading to increased activity in language study.

1951 S.A. Wurm recognizes connection between Kiwai and languages of Central and South-East Papua.

1954 A. Capell surveys literature for all districts of Papua New Guinea and points out areas for further research. Revised edition issued 1962.

1957 Summer Institute of Linguistics team enters Guhu-Samane.

1959-64 Summer Institute of Linguistics teams enter Kunimaipa (1959), Weri (1960), Biangai, Managalasi (1962), Ömie (= Aomie), Daga, Yareba (1963), and Suena (1964).

1964 W. Steinkraus and A. Pence survey languages of the Goilala Sub-District for the Administration. Suggest that these languages belong to one family.

1966-67 T.E. Dutton of the Australian National University studies Koiari and surveys surrounding languages. Determines Koiarian, Kwalean and Manubaran Language Families. Results published 1969 and 1970.

1969 D. Wilson establishes the Binanderean Language Family and together with others (Capell, Healey *et al.*) illustrates aspects of the structure of various member languages.
T.E. Dutton surveys remaining areas of South-East Papua and establishes Mailuan, Dagan, and Yareban Language Families and adds to the Binanderean Family. Results published 1971.

1969-72 Summer Institute of Linguistics teams enter Barai and Koiari (1969), Mountain Koiari (1970), Orokaiva (1971), and Korafe (1972).

1970 B. Hooley and K. McElhanon suggest Guhu-Samane is most closely related to Binanderean languages and establish the Binanderean Stock.

1971 S.A. Wurm of the Australian National University proposes that Papuan languages of South-Eastern Papua constitute the South-East New Guinea Phylum.

1973 T.E. Dutton publishes checklist of all present-day villages and languages in Central and South-East (mainland) Papua.
Summer Institute of Linguistics team enters Notu on the north-east coast.

1974 Sketch grammars of Koita, Mountain Koiari, Ömie, Barai, Magi (or Mailu), Yareba, Korafe, Guhu-Samane, prepared for publication - see Dutton 1975a.

1974 Dr N. Thomson prepares account of the dialects of Magi for publication - see Thomson 1975b.

N O T E S

1. See parts (II) 4.1. and (II) 4.5. for further details.

2. These figures are taken from the latest sources except where, as is sometimes the case in Healey 1973, which lists languages in which members of the Summer Institute of Linguistics are currently working, the figures given refer only to parts of the total language (e.g. Barai, Korafe, Mountain Koiari).

3. This is sometimes referred to as the Kunimaipa(n) Family.

4. These figures obtained by adjusting figures in Dutton 1971a to accommodate Sirio and the reclassification of certain other villages. See subsection 2.9.5.7. below for further details.

5. See Austing and Upia 1975, Dutton 1975b, Farr 1975, Garland 1975, Olson 1975, Richert 1975, Thomson 1975a, and Weimer 1975.

6. See Garland 1975, Olson 1975, Austing and Upia 1975, and Dutton 1975b.

7. See Ray 1938:158 for an account of earlier studies on this language. Other, relevant studies have been made by Abbi (1964), Firth (1952), Hogbin and Wedgewood (1954), and Malinowski (1915; 1967).

8. I am indebted to Dr Thomson for this information.

9. See Williams 1944:92-95.

10. See Ray 1938:161.

11. "Dimuga" is said to be a pejorative Mailu term for the Daga. It means something like *bushy, dim witted* or *dumb*.

12. I am indebted to Dr Thomson for this and other information on some of the languages of the south coast.

13. Sources for the number of speakers are given in subsection 2.9.1. above.

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P A R T 2.10.

THE WEST PAPUAN PHYLUM

2.10.1. THE "WEST PAPUAN PHYLUM": GENERAL, AND TIMOR AND AREAS FURTHER WEST

A. Capell

Editors' Note 1:

When the manuscript of this chapter was completed by A. Capell in early 1974, the Alor-Timor languages were still thought to form part of the West Papuan Phylum. Today, in early 1975, the Timor-Alor-Pantar Stock is regarded as a sub-phylic member of the Trans-New Guinea Phylum (see 2.5.3.3.2. and 2.5.4.2.1.). In spite of this recent re-classification, it has been decided to leave the present chapter in its original form and place in volume I, rather than requesting the author to take out the discussion of the Timor-Alor languages from it and to re-write the manuscript for it to form two separate, independent sections, one on the Timor-Alor languages for inclusion in the sections 2.5-9. which deal with the Trans-New Guinea Phylum languages, and one for inclusion in the discussion of the West Papuan Phylum. Because of the nature of Capell's contribution which constitutes a close-knit, well-rounded chapter, this would have involved a major re-writing task without any real gain: it is the very nature of his contribution which highlights the problems of Papuan language classification in many areas, and at the same time contains clear pointers intimating that the inclusion of the Timor-Alor languages in the West Papuan Phylum is probably in error and that its links with the Trans-New Guinea Phylum languages are quite strong. In fact, Capell's remarks clearly outline, in an anticipatory fashion, the now recognized classificatory status of the various languages of the whole area which, in early 1974, was still believed to be occupied by the West Papuan Phylum as set up in Wurm 1971a. The now accepted Trans-New Guinea Phylum membership of the languages of the Bomberai Peninsula and of a southern portion of the Vogelkop Peninsula as discussed by Voorhoeve in sections of 2.6.2. is hinted at by Capell in 2.10.1.1.1.4. and 2.10.1.1.1.5.2., and the aberrant nature of the Vogelkop Peninsula languages now included by Voorhoeve in the newly established East Bird's Head (or Vogelkop) Phylum (see 2.14.3.) is also pointed out by Capell in 2.10.1.1.1.4. and 2.10.1.1.1.2.3.

In view of this, Capell's contribution, in the form presented here, offers most valuable insights into the nature and problems of Papuan linguistics, and changing it to bring it in line with the status quo of Papuan linguistic classification which is indicated in it anyway in an anticipatory fashion would not have done anything to enhance its value.

Capell, A. "The "West Papuan Phylum": General, and Timor and Areas Further West". In Wurm, S.A. editor, *New Guinea area languages and language study, Vol. 1, Papuan languages and the New Guinea linguistic scene.* **C-38:667-716**. Pacific Linguistics, The Australian National University, 1975. DOI:*10.15144/PL-C38.667*

2.10.1.0. INTRODUCTION

2.10.1.0.1. *SCOPE OF STUDY*

The term 'West Papuan Phylum' (WPP) is a comparatively new one, or rather, one whose use has been developing and becoming more certain over a number of years. It is discussed by Wurm (1971a:611f.) as one of the "established language groups which do not link with the Central New Guinea Macro-phylum". There are two points of interest about it: the first is the fairly obvious one that it is not Austronesian, and the second is the fact that it extends into the islands of Indonesia, west of New Guinea itself. It includes some of the languages of the Bomberai Peninsula and most of those of the Vogelkop area, but it is also represented in Timor and Alor to the west. The languages of the northern half of Halmahera are reckoned as members of the WPP also. However, there does not seem to be any recognizable sharing of vocabulary between these languages and the members of the phylum in Timor and Alor, so that it seems desirable to subdivide it. Such a subdivision will be considered in the present chapter, into WPP_1 = Northern Halmahera etc. (NH) and WPP_2 = Alor-Timor (AT). Although speakers of these languages are numerous and the phylum in New Guinea itself is a large one, it is unfortunate that practically none of them is at all well known, so that a true analysis cannot yet be made (Cowan 1957).

The present chapter correlates the available knowledge and seeks to make additions to it in terms of analysis and comparison of these non-Austronesian (NAN) languages, and also to bring to light further probabilities about the nature of the languages within Indonesian territory as a whole. It will be shown that there is throughout eastern Indonesia a considerable body of vocabulary (even within recognized Austronesian (AN) languages) which does not fit into Proto-Austronesian (PAN) as established by Kern, Brandstetter, Dempwolff, Dyen and other workers. The chapter is therefore divided into two parts: NAN languages of eastern Indonesia and their wider relationships, and some suggestions about the linguistic conditions and pre-Austronesian Indonesia as a whole.

The direction of modern research into New Guinea languages has been the reduction of heterogeneity, the attempt to establish larger and larger linguistic groups and super-groups, so as to reduce the chaos that faced investigators at the beginning of the century. This direction is indicated most boldly by McElhanon and Voorhoeve's recent *The Trans-New Guinea Phylum* (1970), with its sub-title *Explorations in Deep-Level Genetic Relationships*. This work has been taken into account in the present chapter and an attempt has been made to test the possibility of extending the findings to areas of NAN farther west than the New Guinea

mainland. Some consideration of the relation of the WPP to this wider area will occupy the closing section of the chapter.

The situation at the present time, therefore, is that while it is known that certain languages in Indonesia are non-Austronesian (NAN), yet in most cases - with the exception of Northern Halmahera - these languages are imperfectly known and their inter-connections are undiscovered. More recent work by Cowan has shown that there is a relationship between the languages of NH and some of those spoken on the Vogelkop in the north-west of New Guinea, but nothing definitive can yet be said about them. More recently still, Greenberg (1971:807-71) has tried to show some still wider connections between the languages in question, and whether his Indo-Pacific hypothesis is finally accepted or not, his work has value in the discussion. Recently also Capell (1972) has published a little more information about other and additional languages in Portuguese Timor that was not available in 1945. This has been supplied by Dr Ruy Cinatti, a Portuguese anthropologist who worked in Timor about 1960, and adds two other languages to the NAN.

2.10.1.0.2. *NON-AUSTRONESIAN (NAN) AMONG AUSTRONESIAN (AN) LANGUAGES*

The presence of NAN languages in NH was demonstrated by Van der Veen in 1915, but the wider relationships of these languages remained unexamined. In 1944 Capell showed that there were NAN languages also in Portuguese Timor, but again he did not attempt to link these with the NH or any other group of NAN languages, apart from pointing out the divergence in vocabulary, along with considerable structural resemblance. Work done on Alor by the anthropologists Cora du Bois and M.M. Nicolspeyer showed that there was at least one and probably more NAN languages on that island also. As neither was a linguist, no clear demonstration was made, and no work has been done on the text material in Abui (Alor) provided by Nicolspeyer, apart from its partial use by Greenberg. Du Bois stated that there are at least eight languages on Alor, but this statement has not led any linguist to look into them. The linguistic situation on Alor remains uninvestigated.[1]

For these reasons the linguist is at a loss for adequate material, as a matter of fact not only for Alor but for all the Moluccan area of

[1] **Editors' Note 2:** Quite recently, W. Stokhof and H. Steinhauer have undertaken extensive linguistic work on both Alor and Pantar Islands, and have produced a classification of the twelve Papuan languages encountered in the area. Some of their results are being published (Stokhof 1975). See also the late note at the end of this chapter, before the Bibliography, about the present internal classification of the Timor-Alor-Pantar Stock.

Indonesia, and indeed for the whole area between the east end of Flores and New Guinea. It is true that some long-standing gaps in knowledge of the AN languages of this region are being gradually filled in, but there are some that are still unfilled and remain so simply because no one seems to be interested in studying them. Some of the gaps are more serious than others, and that in eastern Indonesia (as a political region) is one of the more serious gaps both for the student of Austronesian languages and for those who are interested in the non-Austronesian enclaves. Their importance lies in the fact that it is here that the 'Oceanic' linguistic type seems to have developed.

Apart from the article by Cowan (1957), only little effort seems to have been made to study the numerous languages spoken between Flores and New Guinea (except for Drabbe 1926a,b, 1932a,b,c, 1935), even to the extent of deciding whether they are AN or NAN. In point of fact some are at base NAN - possibly not only those of Alor and parts of Timor but one or two others, especially Babar. The available information here is all old; some goes back nearly a century, to field workers like Riedel (1886). The analysis of Seran languages by Stresemann (1918, 1926) will prove to be of importance in part II of this chapter (see 2.10.1.2.). This, along with Van der Veen's thesis on the NH and the brief study of Sula and South Halmahera by Adriani and Kruyt (1911) seem to represent most of what is known of this region, although a good deal of material (mostly wordlists) by a variety of less outstanding authors makes a contribution. An analysis made at the present time has to depend very largely on this somewhat less reliable material for the languages between Timor and New Guinea if any account of them is to be taken at all.

2.10.1.1. PART I: THE WEST PAPUAN PHYLUM AS ACCEPTED

2.10.1.1.1. *THE NATURE OF THE WPP*

2.10.1.1.1.1. General Remarks

The West Papuan Phylum as now recognised consists of a number of stocks (Wurm 1971a:611ff.). Geographically arranged, they include the Alor-Timor Stock and certain languages of the mainland of New Guinea, of which the East and South Vogelkop Stocks, the Bomberai Stock, the Moi-Karon Family, the Kalabra Family have place along with the North Halmahera Stock. For these Wurm gives cognation figures, except for the NH Phylum, of which he says (p.614):

> No cognation percentage figures are available to illustrate the degree of interrelationship between member languages of this family, but in all studies and discussions of these languages (Van der Veen 1915, Cowan 1957 and others) they are treated as very closely interrelated languages of a single family,

> displaying far-reaching lexical, structural and typological elements. In comparison with other languages and groups within the phylum they are regarded as constituting a unit.

Despite this statement, however, there seems to be a greater degree of variation in lexicon than Wurm's remarks would suggest. One of the purposes of this paper is to give some lead in to this question, and the statement will be expanded later. In particular, there seems to be very little in common and a good deal of difference between the Alor-Timor languages and the others. That is why at the very beginning a dichotomy was made between WPP_1 and WPP_2. There seems to be only little in common between the two, other than the fact that neither is AN. Certainly there is very little lexical agreement between Alor-Timor languages and NH; between NH and the New Guinea mainland there is a certain amount, although it is not very close. A sketch of the salient structural groups (treating them as sub-branches of one phylum) will be given first.

2.10.1.1.1.2. Northern Halmahera

No detailed description of the NH languages will be given here; but some characterisation of them is required in order to make clear the quite important structural differences between these and the WPP_2, the Alor-Timor group. The salient points to be noticed are as follows:

(a) NH languages have a two-class system in the noun, which carries over into a concord requirement in the verb. Van der Veen marks this as a distinction between persons and non-persons; the concord involves possessives, numerals and some verbs, in which the class of the object is marked by the prefix ŋ-. Within the personal class there is a distinction of masculine and feminine with concord in the pronoun series.

(b) Pronoun subject and object both precede the verb: though they have not actually been written by the Dutch linguists as orthographically part of the verb complex, but separately from the verb base, they are nevertheless incorporated in the form of two separable prefixes into it. Noun class is involved here.

(c) In the possession phrase, the possessor precedes the possessed and is linked to it by the possessive pronoun as in *father his house*, Tobelo o ama ai tau, cf. o bereki ami tau, *the old woman her house*, and o nawa maŋa tau, *the men their house*. This is not an AN type, but it is found in some AN languages, where it calls for explanation. It is found, for instance, in some languages of the Moluccas commonly classed as AN - but their true status will be discussed in Part II of the present chapter.

(d) In the noun phrase, postpositions are found in contrast to the prepositions of the AN languages.

(e) Postpositions also serve to mark tense and aspect in the verb phrase. The only changes in the verb stem itself are due to prefixes which serve to mark transitive (immediate and remote), causatives, plurality and other features, which, if they occur at all, are usually indicated by suffixes in AN languages.

These features are shared only in part by the Alor-Timor (AT) languages; in some features they disagree with the NH group.

Along with these NAN marks on the grammatical level, the syntax of NAN languages in general contrasts with that of AN languages, and the NH group share the syntactical style common to NAN in general. The contrast in sentence pattern appears in the simple declarative sentence as

AN type: S + V + O
NAN type: S + O + V

Within the noun phrase, whether subject or object, the two types of language are in closer agreement, in that both have - or prefer - Noun + Modifier and Modifier + Verb. The occurrence of Modifier + Noun in Abui phrases quoted by du Bois needs further investigation, as Nicolspeyer's (1940) texts do not support it. It was suggested earlier that their mythological content may go with archaic and now atypical grammar, but this is not really likely. In NAN as in AN, the absence of a noun subject may give rise to sentences of the type Ø + O + V, where Ø shows a zero pre-verb subject, as in Loda (NH) bira djo tutuku, *rice they stamped*;[1] but if both subject and object are pronouns such may be the result, as in Loda no mi sano-ka, *you her ask-ed, you ask-ed her*. This result can of course occur in AT languages also, e.g. Makasai ani ai karak, *I you love*, Abui da na taki, *he me shot*.

2.10.1.1.1.3. The Alor-Timor (AT) Group

The basic information on the nature of these languages was given by Capell for Timor in his previously mentioned article (Capell 1944:315-25). Since then, further information has come to light from the easternmost language of Portuguese Timor, commonly but wrongly known as Dagodá. Its speakers prefer Fataluku - as they have no voiced plosives, the former name would become Takatá among them, and it is in any case a pejorative applied by other groups to them. The information available was supplied by Dr Ruy Cinatti and no further detail has yet been obtained. The Lovaea language as far as known rests on a 1951 publication by a Portuguese writer, Manoel Perreira who calls it Epulo, as "a dialect of the extreme east of the Province, spoken in the administrative district of Tutuala."

[1] The word bira is a loanword from Malay beras.

The original article has not been seen by the present writer, but Cinatti supplied a manuscript copy of the vocabulary, without grammar notes of any kind. Both Fataluku and Lovaea materials have been published in part by Capell (1972:95-105). The absence of any material from which Lovaea grammar could be worked out is particularly unfortunate, as this language seems to have a number of noun classes indicated by suffixes, in a manner which no other language of WPP_2 has.

In his original paper, Capell (1944) pointed out the chief structural features in which these languages differ from the AN languages, comparative lexicon being disregarded. These features were at the same time compared with those of NH. There proved to be differences as well as agreements, both on the part of the Timor languages and as a group and amongst the individual Timor languages themselves.

At that time Alor was unknown. It has now been introduced in the form of Abui. Including Abui in the scope of Alor-Timor languages raised only the difficulty that Abui is only one language of Alor and the rest still remain unchronicled: they may be similar or they may not.[1] Some may even be AN. But grouping Abui tentatively with Makasai, Bunak,[2] Fataluku, Lovaea and Oirata, it is clear that these languages do not form a coherent group, so that it is really not satisfactory to group them as though they did, and use the name WPP. This is the reason that WPP_1 and WPP_2 have been used above. Both in structure and in lexicon they vary quite widely among themselves. Although NH languages do not exhibit a considerable degree of lexical disagreement among themselves, and no "common" or "proto" NH has yet been worked out, it is much clearer that they form a series than do the AT languages. These latter certainly agree in disagreeing with the NH in vocabulary, and otherwise also they show less in common.

The AT languages show the normal features of the NAN languages on the syntactic level, and in such points of morphology as the use of postpositions rather than prepositions, but in other regards they disagree with the NH languages:

It seems that none of them shows noun classing (or grammatical gender). However, it is particularly to be regretted that Lovaea has not been studied grammatically; all that is available yet is the one word list of Perreira. This distinctly suggests a number of noun classes, not just the two of the NH languages. Reference to the published extract (Capell 1972) shows a set of endings that are repeated on various nouns, and a

[1] Concerning Pantar: Anceaux 1973. See the Late Note at the end of this chapter, also the Editors' Note there. Reference is also made to Stokhof 1975.

[2] This should be Buna?; but Bunak is easier orthographically.

possible concord of the possessive and adjective. This classification, if such it is, depends on endings, unlike the NH use of free particles. Thus it is possible to contrast the following:

to:ke-ki	*mouth*	and	to:ke kolune	*beard*
areke-ve	*son*	and	areke maekue-va	*daughter*
une-va	*moon*	and	une romi-a	*moonlight.*

The suffixes in the vocabulary that seem to imply noun-classing are -kia, -ki, -va, -ve, -ke, -ka, -a, but the material does not allow of defining their uses. -kia is certainly confined to some but not all body parts; -ki to certain other body parts and to the word for *aunt*; -ke to certain kinship terms, -ka to *father* and *mother* (-ve is used with *son*), while -va is the commonest and is used with most 'natural history' terms as well as *garden, wind, island, mountain, plain* and *earth*; but it is also found with words for *sister, daughter, male* and *husband.* Some nouns that seem to be loanwords from AN languages also carry a suffix: kafe-eva *coffee*; ulu-kia *head* (AN root ulu). AN *kayu *tree* has given ai-ova, but the ending is lost in numerous compounds, such as ai 'ko:keva *leaf* and ai 'omeva *stem* and others. *Tobacco* becomes tabakova, *buffalo* areboa (which probably represents arebova by a mishearing, and derives from *karabao*). In a few cases where Lovaea and Fataluku use the same root, the former has a class suffix: ne:neva, Fat. nana *house*, lake:va *house*, Fat. le, and perhaps kuruekia *knee*, Fat. culo. In the present state of knowledge of Lovaea it is idle to speculate, but it is obviously a language that needs investigation.

Apart from Lovaea the AT languages do not mark noun classes, but Bunak has a distinction of animate versus inanimate in the third person singular pronoun: himo and homo respectively, linking with verbal and possessive prefixes g- and h-. Abui texts do not have a pronoun, but there are two forms of 3rd singular prefix, d- and h- which presumably are not interchangeable.

Abui presents closer agreement with Bunak than with the other languages of Timor at any rate in structure. The agreement is formal, for Bunak divides its nouns along the lines of inalienable versus alienable as do AN languages generally. Abui agrees with Makasai and Oirata in prefixing to all nouns, while Fataluku in certain cases uses juxtaposition. In various parts of its morphology, Abui agrees closely with Bunak, apart from the general agreement in sentence structure with the common pattern of most NAN languages.

1. Abui and Bunak have similar sets of pronouns, which are displayed in Table I. They will be discussed below (see 2.10.1.1.2.2.). It also uses prefixed pronouns, of which it has a single set, prefixed to nouns as

possessive and to verbs as subjects and objects. These are shown in the above-mentioned Table. In Abui all nouns take as possession markers the same prefixes as those used with verbs to mark person. In Bunak only 'inalienables' have possessive prefixes; others require g-ie *his* between possessor and object possessed, e.g. n-ie mar *my field*, as against n-ubul *my head*; with a possessing noun Berthe gives Bau gie ama *Bau's father*. In Bunak the part-whole relationship uses only the prefix: apa g-ubul *buffalo its-head*; momen mone gie do *man old his house*. This last type of construction plays an important part in the AN languages in certain areas, as will be pointed out in the relevant place in this study.

TABLE I: PRONOMINAL FORMS IN BUNAK AND ABUI

	BUNAK		ABUI	
	FREE	BOUND	FREE	BOUND
Sing. 1.	nei, neto	n-	ne, nedo	n-
2.	eto	V-,Ø-	e, edo	V-,Ø-
3. an.	himo	g-	de, dedo	d-
3. inan.	homo-	h-	he-, hedo	h-
Plur. 1. incl.	i		pi, pido	p-
1. excl.	nei		ne, nedo	n-
2.	ei		re, redo	r-
3.	hala'i		he, hedo	d-
Dual 1. incl.	ili		?	
1. excl.	neli		nufa	
2.	eli		rofa	
3.	-		dofa	

Note: In the bound forms, Bunak uses the same prefixes in all numbers, Abui has separate sets for singular and non-singular. There is a set of Abui forms with person prefixes to a root -niŋ: these are inclusive: piniŋ *we altogether* etc. No dual 1. inclusive has appeared in the texts, and usually the plural forms seem to be used: pisa *let us both go*.

2. Bunak verb stems do not change for tense; particles are used after the verb to mark the time or the completion of an act, as an expression of time such as *yesterday* may be used. In Abui there are changes in the verb ending to indicate tense: -te, -ti, marks futurity, purpose or goal, -da marks an action that has been completed, and is itself a derivative of di *make*, rather like the use of *did* in English to mark past time. Abui also has a sentence-medial (SM) form, -(n)ba, as in mu-nba ama de kodi ba-nba lake *when-he-died, the people him tied-up-and- dragg-ed-and-*

went away, i.e. *when he died, the people tied him up and dragged him away*. A variety of suffixes appears in Abui of which no clear analysis has yet been made. But frequently the stem is used without clear tense marking (as in lake *go away*, above). The Abui complications are foreign to Bunak and Makasai or Oirata. Neither do they resemble NH forms. Makasai relies on particles or time markers as does Bunak (Capell 1944: 318-9) and Oirata (De Josselin de Jong 1937:209). Fataluku is the same in this respect, where hai before the verb indicates past time and seemingly acitu after it marks futurity (Capell 1972:102-3).

In Hawu the pattern is different, but still not NAN. Further discussion of this language will be given below, as it has not been listed earlier as a NAN language. Its word order is normally V-O-S, which differs from the bulk of the NAN languages here dealt with. Its pronouns are AN, so they have not been listed above, but its verbal structure is distinctive, and has only two AN elements neither of which is used in quite the same way as in AN languages. A typical utterance might be

peŋĕdu au ri ja la ĕmu
bring you (erg.) *I to house*

I bring you to the house.

In being an ergative language it agrees with the also divergent languages of Flores to the north;[1] in lack of detailed verbal marking Hawu agrees with Timor. Where marking takes place, the features are not clearly AN; ta may be a future marker but is more generally a marker of the verb as such, as in ta kako ja *I am going* - which could be future, but this is not so in toi ḍo ri ja ta-deka no *I did not know that he had come*. The position of the negative ḍo is also peculiar (as well as the word itself): literally

toi ḍo ri ja ta-deka no
know not (erg.) *I come he*

Intransitive sentences are constructed similarly but without the ergative ri: ta kako ja *I'm going*, and there are verbless sentences also: ije ḍo minahari *good not thus, it is no good like this.*

In the verb phrase, the number of particles usable is rather un-AN, as in ta la kerei ri ke pa Pepeka ri dou ae ne *the prince asked Pepeka again*: the first ri is *again*, the second ri is the ergative; ta marks kerei as a verb, *ask* (although it may also indicate future action), ke marks past action, la indicates action away from the speaker. This last

[1] It can be argued that the ergative construction is AN and that ri, found in Flores as e.g. Manggarai lé is the same at root as Malay oleh, usually translated *by* or *through*, but this study is outside the present chapter. It still would not show whether such an ergative was an AN feature (linked with post-verb subject) or a borrowing from NAN substratum. See the chapter on 'Mixed Languages' ((II) 4.5.1.).

may be AN, as ma, marking action towards the speaker is - but both precede the verb, not following it as in an AN language. Perfective is marked by a particle ěla (comparable perhaps with Madura ělla), which is followed by pe-, causative (one of the two AN prefixes: AN pa-; the other is ma- stative): ta ěla pe-tao ri no *he has finished it*, lit. verb-perf. caus-*do* erg. *he*. This involvement of causative in perfective cannot be discussed in the present space.

Negative is expressed by + ḍo(h), as in iu au ta peḍa ḍoh? *body your* verb *sick not*, i.e. *are you never sick?* (an example from Wijngaarden's Dictionary). The negativiser follows the verb: kako ḍo ja miha *I am not going alone*. The dehorative is ḅole (cf. Buton bola), but this precedes the verb: ḅole kako *don't go!*. In Dawu, *not* is ḅoe: nia ḅoe = Hawu ije ḍoh *good not, it is not good*; for *don't* Dawu has ḅaku.

Even with the small amount of detail possible here it is clear that the grammatical system of Hawu-Dawu is radically NAN, however much AN vocabulary may have been taken over. It is a clear parallel to the situation of English vis-à-vis Romance and Teutonic.

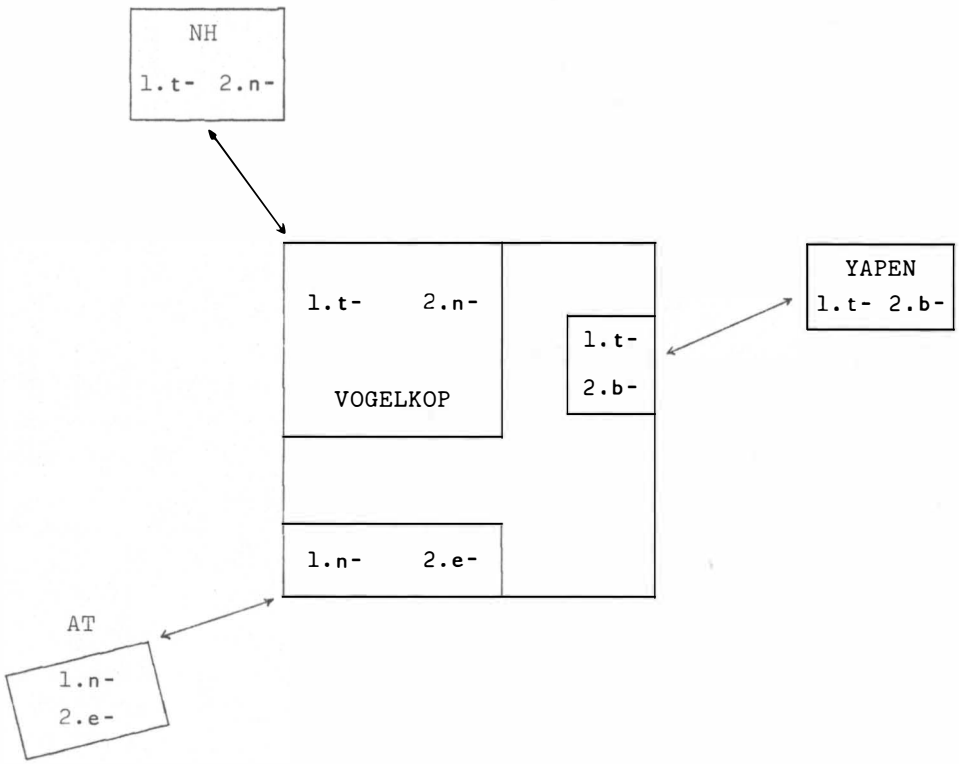
2.10.1.1.1.4. The Mainland Languages

What are here called mainland languages are those of the western "bird's head" of New Guinea, earlier known as the Vogelkop (VK). They are difficult to assess because the information available on the individual languages is still very meagre. In his paper on the Papuan Linguistic Situation (Wurm 1971a:617), the author discusses the structural features of these languages that would link them to the WPP, though without making the distinction between WPP_1 and WPP_2 that is employed here. The point of interest is that the VK and Bomberai languages, to the south-east of them, like those of the western islands hitherto considered, divide into two subgroups, one of which seems to have links with the NH languages, while the other links with the AT group. This latter was discussed by Cowan (1965). The subdivision here rests on methods of conjugation: the VK languages conjugate by prefixation, the Bomberai languages by suffixation. The latter, therefore, do not link with the WPP in structure (2.10.1.1.2.3. below).

Within the former subgroup, the markers of 1st and 2nd person singular are diagnostic. Diagram A shows these subdivisions and their geographical relationships to each other. It is clear that agreement not only in the use of prefixation as a method of conjugation exists between VK, NH and AT languages, but that there are regional connections between the prefixes in definite areas of the VK and those in NH and AT languages. Perhaps too much stress should not be laid on the marking of 1st person

singular by n-, since this happens in other parts of New Guinea - and, for that matter, elsewhere also, even in the Bantu languages of Africa! However, the occurrence of t- in NH and in VK in this person is noteworthy. Wurm also remarks that "the prefixing languages, with the exception of the Timor languages, have a two-gender system". It has been shown above (Table I) that Bunak and Abui both have a two gender system to the extent of possessing separate pronouns and 3rd person singular markers for animate and inanimate subjects. These two languages, then, fall more closely into the pattern than Wurm allows for.

DIAGRAM A: PREFIXES OF 1. AND 2. PERSON SINGULAR IN VOGELKOP LANGUAGES AND THEIR WIDER RELATIONSHIPS



At this point, more recent work by McElhanon and Voorhoeve on a suggested Trans-New Guinea Phylum (McElhanon and Voorhoeve 1970) comes in for consideration. Their Map 1 does not include VK languages, but these need to be compared with the overall patterning. According to a recent statement by Wurm (personal communication), it seems that the southern

part of VK belongs to the Trans-New Guinea Phylum, but it still remains to determine how far north the relevant area stretches. The use of the term phylum by the two authors needs to be remembered also: in a footnote on p.102 they say:

> The label 'phylum' is used here to simply indicate that the writers recognise a group of languages which are genetically related at a low level. This relationship is regarded as being significantly higher than that implied by the term 'macro-phylum' as used by Wurm (1971a), and future studies may show that perhaps the label 'stock' is more appropriate. 'Phylum' as used here does not imply any particular lexicostatistical level of relationship since lexicostatistical relationships were not computed.

The relevance of this statement will come up again for mention when lexicon is considered.

In a later study again, Wurm (1971b:163) has established a Trans-Fly Stock, in which he posits a masculine-feminine two gender system as part of the common structure. This agrees with the NH-VK situation, but less so with that of AT-VK. Unfortunately, the Trans-Fly group does not stretch far enough to the west before there comes the gap presented by the languages of the northern half of Western New Guinea, though some language groups to the west of the Trans-Fly Stock (e.g. those of the Bulaka River, Marind and Nimboran Stocks) also show this feature.

An earlier work by Cowan (1953) shows the results of a provisional study of the mainland languages of the VK groups. There is little detail in this paper and it is difficult to make out a general picture of language structure. Cowan in the English summary to his paper discusses the mixture of Papuan and AN elements noticeable in all the VK languages except a few in the east (Manikion, Mansibaber chiefly). He writes:

> Nearly all of them show a more or less distinct AN element at least in their vocabularies. In some cases this element is found even in the numerals, but this can be regarded as a decisive point in view of the fact that the same is the case in the undoubtedly Papuan Ekari of the Central Highlands.

He goes on, however, with a statement that is not so disturbing in view of the now known structures of the AT languages which were not as well known when he wrote:

> Another complication in this connection is that in all these VK languages the conjugation of the verb appears to be effected by pronominal prefixes, as is also the case in the Melanesian languages of New Guinea, but is found in many undoubtedly Papuan languages as well.

Later information shows that prefix conjugation is not a borrowing from AN sources at all but is quite Papuan. He then goes on to mention the link between the north-western languages of the VK and NH group, but does not commit himself to any idea of an ultimate connection between the two.

Leaving questions of vocabulary aside at the moment, it may be said that certain structural features in these languages are clear enough to be summarised as a basis for comparison with the WPP languages in general.

1. A dual number is present in the pronouns. In some cases, the inclusive-exclusive distinction is made, as far as the information goes, in the dual number only and not in the plural. *He and I* is distinguished from *you and I*, but there is no distinction between *they and I* and *you all and I*.

2. Separate possessives exist and precede the noun, but there is no mention of suffixed possessives marking an 'inalienable' class of nouns. In Mansibaber alone the information states that the possessive follows the noun, which is very rare, but in the majority of the languages they precede it, as do the demonstratives even in Mansibaber.

3. Tense and mood, as far as they are marked at all, are indicated by free particles placed after the verb. The real meanings of these markers are not yet known.

These features are in principle very like those which characterise the AT languages, and to a certain extent also the NH. The matter of phonemic correspondence is somewhat different, and the subgroupings set out in Diagram A come into the picture at this point.

Quite obviously the eastern VK languages are not part of the WPP complex so far as the shapes of the person formatives go. Those of the north-west clearly link with NH but not with AT. The distinction made earlier between WPP_1 and WPP_2 needs to be recalled at this point. The languages of the south-west do seem to agree with AT and are worth considering. But more points of agreement than this one need to be found, and when closely examined this one does not seem to be really a point of agreement at all. The prefixes in the VK languages are subject markers, those in the AT languages are object markers. This difference is one of principle, and the formal agreement loses some of its value when this is remembered. The one point of complete agreement is the further formal point that both the t/n languages and the n/e languages have only the one set of prefixes, which are prefixed to all numbers of the verb, whether as subjects or as objects, and there are no separate forms for plural and/or dual. Reference can be made to Cowan (1953:21) for examples in the Mogetemin dialect of Ayamaru.

The paucity of information on the structures of the mainland languages makes the interpretation difficult. Although Cowan (1953:25ff.) shows the NW → NH connection clearly enough, the remainder of his material is too defective to help. His 1965 paper is better as far as pronouns are

concerned, and these are discussed below (2.10.1.1.2.2.). It is perhaps safe to suggest that there is a linkage along the line Abui → Bunak → Makasai → Oirata → mainland.

At the same time it is doubtful, at the least, whether the Oirata verb does really mark subject by prefixes if there is a noun or an expressed pronoun subject. The word divisions in the texts (De Josselin de Jong 1937) are unreliable and the grammatical notes as well as the texts show only that the pronoun object is marked by a prefix to the verb, as in Makasai, Bunak and Abui, and even this might well be treated as a proclitic particle. The verb itself in the texts carries no prefix if it is subject, especially in the third person, and the pronouns which precede it in first and second persons may not be the short forms that could be regarded as proclitics but may be full forms. The verb phrase can just as easily be written with separate pronoun indicators, and when the verbs occur sentence finally they do so without prefixes. An example from De Josselin de Jong's texts may be given in his spelling and the suggested revised spelling: they are taken from De Josselin de Jong 1937:106.

DeJ.: amara ha Apna-Apha ēasile inane?

Capell: a mara ha Apna-Apha e: asile i na ne?

English: *you came while our-Creator you to he said thus?*

which is parallel to:

DeJ.: Tatanluku: antemara nara Apna-Apha noun nakun me anina nie

Capell: tatanluku : ante mara nara Apna-Apha noun nakun me
(he) answered: I came then Our Creator instruction did
ani na nie.
me say thus

Such a respelling brings the language into line with Makasai and produces very similar sequences to those of the Abui texts also, where Nicolspeyer has likewise been inconsistent in her spellings. Comparison of these languages with Bunak shows that in the latter also there are definite prefixes expressing person (the same for all three numbers): possessives with nouns (n-ubul *my head*) and objective with verbs (n-azal *me-see*), but like them Bunak does not use subject prefixes. In Bunak, *I see him* is nei g-azal *I him-see; he sees me* is himo n-azal. In Abui similarly, na he rei *I him see* and ha ne rei *he me sees*. The spellings in the texts hesitate between prefix and proclitic, and there are some vowel harmony changes that are not worked out. In Bunak, also there is an intransitive form prefixing h-: nei h-azal *I see*. This interpretation differs from that of Berthe (1959) but it does seem to bring the language more into harmony with the others of WPP_2 without distorting it. Further discussion of this subject will be found in 2.10.1.1.2.2. and 2.10.1.1.2.3.

If the forms of the prefixes be considered and not their function, there is, of course, correspondence between the AT group and south-west VK. Whether the comparison is historically valid cannot be stated. There may have been a change from subject to object marking which cannot be traced now. If the forms only are kept in view, then it is right for Cowan (1965:363) to say:

> Even a casual glance at the list will be sufficient to show the striking similarity between the pronouns in the seven languages. Confining ourselves to Oirata and the south VK languages, this is particularly the case as between Oirata and Kampong Baru, as far as the 1st person singular and plural excl. and the 2nd person singular and plural are concerned. In addition there is agreement between the 1st and 3rd person singular prefix forms in these two languages.

Cowan then proceeds to apply his "phonostatistical" method (Cowan 1963) to test the statistical probability that the similar forms are really linked and not just coincidences. His decision is that chance is practically ruled out both for the pronouns and for the person markers, and this leads him to stress the factuality and the importance of Brandes' Line, which runs north from between Saru and Roti Islands, between Flores and Solor Islands, east of Celebes to the Sangir and Talaud Islands and the Philippines. Then he adds: "It appears that this line also marks the westernmost extension of present-day Papuan". Further remarks that may raise doubts about the accuracy of this last sentence will be made in Part II of this chapter, for it now seems at least doubtful.

2.10.1.1.1.5. West Papuan Phylum Lexicon

2.10.1.1.1.5.1. *Function of Vocabulary in Determining Language Relationships*

Neither structure nor vocabulary by themselves suffice for the determination of language relationships. The tendency hitherto has been to put too great a trust in wordlists, but it is now realised that no form of lexicostatistics alone can determine the relationship of one language to another in a really definitive way. Structural comparisons alone are similarly unsatisfactory; they may provide a typology, but not a genealogy, even if the phonemic shapes of the components agree with the patterns shown. The Indo-European family itself has sufficient structural variety to discourage this type of investigation, and it so happens that in this case the historical successions of various structural types can be demonstrated - but this is rarely the case.

So the present section passes on from structure to lexicon. The languages making up the WPP are to a large extent still inadequately known, and this inadequacy is on the lexical as well as the structural level. The available materials are made up as follows:

Alor: Abui vocabulary by Nicolspeyer, with some words from Du Bois.

Timor: Vocabulary of Makasai and Bunak in Capell (1944); Bunak in Berthe (1959), Fataluku and Lovaea partly included in Capell (1972) and partly unpublished; Oirata in De Josselin de Jong (1937). Discussion in various works of Cowan.

North Halmahera: Hueting (1908) and dictionaries of various individual languages published at different dates. Tobelo is here taken generally as a model since no common or proto-NH has been worked out.

New Guinea Mainland: Scattered materials, most of which have not been published, such as the official vocabularies collected through Malay by the Dutch Government in Western New Guinea, and used by Cowan as the basis of his studies. Later materials have been published by Anceaux (1961).

The fullest and best materials are those of the NH languages, but as these form a solid group with apparently little apparent outside relationship, they are not as valuable for the present work as might be desired. There is room yet for much future work in the field, in the NAN languages as well as those that are classed as AN. Of the latter, quite a number are still not well recorded. These will be discussed elsewhere in this work (see (II) 4.1.0., (II) 4.3.0., (II) 4.5.1.), but need to be taken into account here also - especially in Part II of this chapter (see 2.10.1.2.). The point about them is that they show a substratum which is apparently not AN, and this is still to be investigated. One of the best dictionaries of this type of language is Manggarai (Verheijen 1967 and 1970) and its comparative information most valuable. The Buli dictionary by Maan (1940) is also important for the present study. Sawu (or, better, Hawu - the people speak of their language as Li Hawu and their island as Rai Hawu, 'Hawu county') is in a somewhat different position and its inclusion here in NAN surroundings may excite comment and disagreement. The language has ever since Kern's day (Kern 1892) been classed as Indonesian, and regarded as forming part of the Bima-Sumba subgroup. It shares the pre-glottalised consonants ɓ, ɗ, ɗj, g with those languages - and some of these sounds occur also in Flores and as far north as Wolio: the latter is indisputably an Indonesian language. Hawu also has a large AN vocabulary, including the pronouns, and a couple of grammatical features, principally the stative prefix ma- and the causative pa- (with variations in their uses). However, it contains no other AN grammatical features at all, and while being quite NAN, its grammar does not fall into line with the AT languages, but is of an independent type. The right evaluation is therefore that Hawu is NAN, with a very heavy overlay of Indonesian AN vocabulary. It is probably in much the same position as English, which has a heavy overlay of Romance

vocabulary but a basically Germanic structure and is therefore still included as a Germanic language. This evaluation of Hawu will be discussed in more detail, and its truth be made reasonably clear, in a later chapter of this work (see (II) 4.5.1.). One feature of Hawu AN vocabulary on which Kern laid stress is the unusual amount of metathesis, and this will be dealt with in that section.

There is also the language of Dao or Dawu, a small island close to the coast of Roti. Only one short specimen of this has ever been published, and that is called 'Iets over de Taal van Dao', by J.C.G. Jonker, as a contribution to the *Album Kern* Festschrift (Jonker 1903). This consists only of a short story text with analysis (but no translation!). The language proves to be a dialect of Hawu, with strong Roti influences - and if Hawu is to be classed as mixed language then Dawu is still more so. In fact there seem to be some influences from northwards, e.g. Wolio area such as Buton bola *don't!* which appears in Hawu as ḅole *so as not to...*, Dawu ḅoe. No special treatment of Dawu is included here because of the inadequate documentation, but the language is undoubtedly to be included with Hawu as part of the NAN area in Indonesia.

In point of fact, no comparative study in any of this field has yet been attempted. The emphasis throughout Indonesian studies has been on the Austronesian which is undoubtedly the basis of most of the languages. An undercurrent of non-Austronesian, especially in Eastern Indonesia, will be made plain in Part II of the present chapter (see 2.10.1.2.). The one exception to this statement is the work of Joseph Greenberg (1971), and this is concerned with evidence for his Indo-Pacific theory (Greenberg 1971:807-71), which is discussed below, and, along with Stresemann's work, will be considered also in Part II of this chapter (see 2.10.1.2.).

Greenberg's first section is concerned with AT languages (1971:812-4), and his comparative list involves 92 items. These are not all different - in a few cases two separate roots of the same meaning are separated out as present in different areas. The list may be taken as representing 90 items for computational purposes. It shows certain resemblances amongst the languages of Timor, Oirata and Alor (Abui). If, however, other languages are brought in and the same vocabulary compiled, results can be interesting. Buru (Masarete) shows for these 90 words, only 22% correspondence with AN roots - and it is called an AN language and its grammar is largely AN. The rest are NAN but not in agreement with Greenberg's AT list. Glottochronologically, 22% correspondence points to between 3,000 and 4,000 years separation, which is not the case in this instance. Quite a number of languages in eastern Indonesia (the

so-called Moluccan Group) show low AN counts but quite a high proportion of AN grammatical features, and presumably the Moluccas as a whole are basically NAN territory. AN immigration and influence has been continuous, right up to modern times, but more effective in some parts than in others. All the languages appear to carry a NAN substratum, which will be studied later, in Part II (see 2.10.1.2.). On the other hand, the basically NAN languages mostly show some influence from the AN, at least in vocabulary, even though they may not be great. The Lovaea language of eastern Timor is most interesting in this regard, for while it shows no apparent relationship to its neighbours, it appears to have a higher AN element than Fataluku or Makasai.

2.10.1.1.1.5.2. *Examination of Greenberg's Vocabularies*

The comparisons presented by Greenberg seem to be valid and fully acceptable. There is no need to reproduce his vocabulary here as such, but it is useful to do so in a modified form. The present author has not attempted to construct any sort of linguistically valid proto-AT, although this must be done at some stage if the group is to be studied as a whole. All that he has done is to choose out a likely form for the present purpose: it is entirely *ad hoc*. Table II therefore shows a set of possible AT-protoforms with which comparison is made with an equally *ad hoc* set of NH equivalents, mostly Tobelo. A true proto-NH, like proto-AT, still waits to be done, and more is being said about NH elsewhere in this volume. Occasionally other languages have been used when Tobelo is clearly a minority form, for there is considerable variation among the NH languages, but not, it would seem, as much as among the AT group. What is important in the Table is the fact of the sharp break it shows between the vocabularies of AT (= WPP_1) and NH (= WPP_2). Only fifteen of the 80 words given here seem to present common roots as between the two groups. These are the words for *bitter, cold, cry out, cut, fall, fire, flower, a fly, to smell, stone* (b), *tree*.

TABLE II: EXTENSION OF GREENBERG'S VOCABULARY
To compare AT with NH Languages and Hawu

ENGLISH	ALOR-TIMOR	N. HALMAHERA	HAWU
1. *ask*	us(e)te	liha, sano, galoko	kerei
2. *bathe*	wela	ohiki	ḍjiu (AN)
3. *behind*	ura(ka)	turu	(pa) keriu
4. *belly*	ato	pokoro	dəlu, kebaka
5. *bird*	asa	totaleo	dolila; manu = *hen*
6. *bite*	tia	goli	
7. *bitter*	malara	mali	(p)uḍu
8. *brother*	ka(ka) *(elder)*	hiraŋa	ʔaʔa (AN)
9. *child*	moto	ŋohaka	naiki
10. *cold*	palata, pulata	malata	mirindji
11. *come*	maʔu	sapoŋo	dəka (Malay dekat, *near?*)
12. *cover*	ʔpanuik	hiwelo	robo
13. *cry out*	(k)ole	orehe	taŋi (AN)
14. *cut*	uti	ŋuki	para
15. *day*	vatu	waŋe	loḍo (also *sun*)
16. *descend*	pai	uti	puru
17. *die*	umu	soŋeŋe	made (AN)
18. *dig*	to(h)i	paiti	
19. *dry*	tata	tooleŋe	maŋu
20. *earth (mud)*	muka	lepa	(wo)rai
21. *earth (soil)*	(a)no (AN?)	tonaka	rai
22. *eat*	nawa	olomo	ŋaʔa (AN?)
23. *excrement*	atu	(k)ihoko	poʔe
24. *eye*	ina	lako	mada (AN)
25. *face*	panu	himaŋa	taŋa mada
26. *fall*	tapa	tiwa	tue, bui
27. *fear*	ma(ha)ne	modoŋo	megigi
28. *female*	pana	hekata	rena
29. *fire*	ata	utu	a:i (AN)
30. *fish*	api	nauoko	naduu
31. *flower*	buk, biek	hohoko	wila
32. *fly* (n.)	uhur(u)	guhuru	lara
33. *foot*	idi	dohu	ḅeḅo
34. *fruit*	itu ?	sowoko	ḅue, wue (AN)
35. *garden*	ama	ledi	
36. *give*	ni(na), ina	tjatu	ḍjole, ḍjula

TABLE II (cont'd)

ENGLISH	ALOR-TIMOR	N. HALMAHERA	HAWU
37. *go*	mara	djobo	kako
38. *good*	rau	laha	iye
39. *hair*	wata	utu	ru kətu (kətu, *head*)
40. *hand*	tana	giama	ruai
41. *hear*	wali	isene	ḍəno, rəŋi (AN)
42. *hit*	pasi	gohara	taḅe
43. *hold*	(o)nai	hakuta	pəru
44. *hole*	kuru	guhu	roa, bo
45. *inside (cave)*	mil	haara	
46. *interior*	mutu	lowo	ḍarə
47. *kill*	uta	to(ho)ma	pemade (AN)
48. *know*	tata	nako	toi, tade
49. *leaf*	asa(h)	soka	
50. *long*	lo(k)u	kurutu	merai
51. *lose*	molu	rugi	
52. *make*	ini	aka, diai	tao, məhi, mane
53. *man (husband)*	nami	wekata	mone (AN)
54. *man (person)*	ənа	njawə, nauru	dou (AN taw?)
55. *moon*	uru	meda, tono	wəru
56. *mouse*	(t)ura	karəhi	keḅuku
57. *name*	ne(ne)	romaŋa	ŋara (AN)
58. *neck*	mani(kəra)	ŋomasa	lakoko
59. *nose*	muni	ŋuruŋu	bewəŋa
60. *old (thing)*	matu(sa)	pereki	
61. *old (people)*	laʔita	timono	
62. *put*	rau	haho	
63. *rain*	aya	besaka	adji
64. *roast*	rahay(e)	hinəŋa	həŋi
65. *root*	ai (AN?)	ŋutuku	amo
66. *rope*	tara, taru	gumini	dari
67. *sibling*	nana	biraŋa	
68. *side*	weʔe	liketo	təbi (AN)
69. *sing*	leu	(njanji, Malay)	
70. *sit*	mire	gogeruku	ḍjəḍi (AN djadi, *become*?)
71. *sleep*	taya	kioloko	bəḍji
72. *small*	kilai	eteki	iki (AN)

TABLE II (cont'd)

ENGLISH	ALOR-TIMOR	N. HALMAHERA	HAWU
73. *smell* (vb)	ʔamuhu	ami	təḍe
74. *stand*	nate	oko	titu
75. *star*	ipi	ŋaŋama	moto, wotu
76. *steal*	mani (?)	tosiki	meano (AN); loi
77. *stone* (a) *rock*	apa *(mountain)*	nuha	
78. *stone* (b)	hele	helewo	(wo)wadu (AN)
79. *tail*	(p)ula	bikini	(ru)lai
80. *throw*	lane ?	umo	
81. *(on) top (of)*	iya	mata, toma	dəni
82. *tree*	ate	hate	aḍju (AN)
83. *walk*	pale	tagi	rae, pehia
84. *war*	salu ?	kudoti	patao ?
85. *water*	ira	akere	ai (AN)
86. *what?*	ina	okia	ŋa, nami
87. *when?*	tuna *(time)*	nako	pəri (also *tomorrow)*
88. *where?*	tehi	kia(ka)	mi
89. *wish* (vb)	(k)aluke	niata	ui, (pe)wae
90. *woman*	tupuru	ŋoheka	mobəni
91. *wrap up*	boka	hauo	uḍje *(tie up)*
92. *year*	tuŋ, toŋ	panina, muhuŋu	tou (AN)

When Fataluku, which was not available to Greenberg, is added, it usually fits in fairly well to his list. Lovaea does not, however, in the comparatively few instances in which the available materials overlap. It does, as said earlier, seem to have some AN loan element which is not present in the other AT languages. Table III shows the complete divergence of this language in comparison with Fataluku and the other AT languages. Again it is to be regretted that so little of it has yet been recorded, and quite possibly the present material - lacking all grammatical information - distorts the picture seriously. Of the 17 words in Table III the only likely agreements with common AT are the words for *root* and *water*, with *man* showing agreement with Fataluku only, and 2 (3) words in 17 may be a coincidence or the result of borrowing. On the present evidence Lovaea may be a language isolate.

TABLE III: COMPARISON OF SOME LOVAEA WORDS WITH COMMON ALOR-TIMOR

ENGLISH	LOVAEA	FATALUKU	COMMON AT
die	maemaea	umu	umu
eat	kainaka	mace	nawa
eye	mokoe-kia	inamoco	ina
fall	nukuriera	aracane	ma(ha)ne
fish	iene-va	api	api
fly (n.)	lare-va	nailo amu	uhur
garden	kite-va	pala[1]	ama
hair	ui-ki,	ca?ule?u	wata
hand	ilepi-kia	tana	tana
leaf	ai ko:ke-va	cipi	buk, biek
man	maraŋke-va	ma'aro	ana, ani
nose	vato-kia	mini	muni
root	ai ovarena	ilarina	ai
steal	mipaina	o?oca	mani (?)
water	nirei-te	ira	ira
woman	makwaeke-va	tupure	tupur(u)

A further possible comparison of Greenberg's material would be with the mainland languages, and this is approached firstly through that presented by Anceaux (1961). As far as the two lists overlap, only four possible agreements are found: AT tapa *fall*, Serui Laut, Ambai and Wandammen (the last being AN), tawa; AT buk or biek *flower*, the root bu appears in Ambai, Ansus and Kurudu on Yapen; AT ina or ni *give*: Ansus and other languages, oni and variants; AT rau *good*: Waropen, ro, roo - and this is on the east side of Geelvink Bay and is classed as AN. This list again is not impressive.

Greenberg's list is not a standard 100-word list, which seeks to examine language relationships systematically. It is the result of seeking what words in a number of languages actually do correspond. In Capell's study of the Timor languages (Capell 1944:330-7), vocabularies of 144 words in 11 Timor languages were given, to which the numerals were added. These provide a basis for a more regular 100-word list if the less suitable words are eliminated and Abui comparisons added.

[1]This word in other AT languages means *house*. It could be PAN balay *house*. In the Lovaea words, putative noun-class endings are hyphenated from the roots.

When the Alor-Timor and North Halmahera lists are scrutinised, a number of words are seen to be shared between AT and NH. The following numbers are for the most part fairly definite, but a few are doubtful though likely: Nos. (3?), 7, 10, 13, 14, 26, 29, 31, 32, 38, 39, 44, 73, 78, 82, (85?). These are a worthwhile section of the vocabulary to indicate some sort of relationship between the two groups. Possibly systematic comparison of the two sets of languages would produce more examples. On the other hand, the grammatical systems of AT and NH are rather apart.

Examination of the mainland New Guinea languages and the AT group also produces suggestive comparisons. Table IV, prepared by C.L. Voorhoeve, shows the possible relationships between 21 of the AT words (disregarding NH) and languages in the Vogelkop area. The remarkable thing about these words is that they tend to be Southern VK rather than Northern. In this instance also, the first two pronouns singular are included, and this is evidence that could be structural as well as lexical. It is much to be regretted that no structural information concerning the VK languages is available. There is a possible connection also between these words and certain of the Wetar words: W. ma *come*, na *eat*, ne *give*: W. nean *name* is derivable from AN (ŋ)aran and does not link with the AT root ne(ne), and ma *come* could well represent PAN maɣi.

TABLE IV: LEXICAL CORRESPONDENCES BETWEEN THE ALOR-TIMOR GROUP AND THE VOGELKOP AND OTHER MAINLAND LANGUAGES
(Drawn up by C.L. Voorhoeve)

ENGLISH	AT	VK
1. *belly*	ato	Kamoro: ato-are *intestines*
excreta	atu	ata *faeces*. South VK has kato *faeces*. The root *ata for *faeces* is Trans-New Guinea Phylum (TNGP)
2. *come*	ma'u	Possible cognates widespread on the mainland: ma (west VK) amo, mao, mawe, south VK; Ekagi, Moni, Dani, Awyu. Lowland Ok, Marind, Sentani all have related forms
3. *dry*	tata	Kamoro: tete, Asmat soso, sa; Asienara tatara, Tanah Merah tate, Brat tat, kat. Possibly related is another series with k: karara, kara, kakar, etc.
4. *earth ?*	muka	Awyu moka, Yaqay moqon, etc. cognates in Mairasi, Ekagi, Moni, Asmat, Ok, Nimboran
5. *eat*	nawa	Asienara: anawe, Iha nowa, etc. cognates in south VK Stock, west Bomberai Stock, Mairasi, Asmat-Kamoro Family, etc. TNGP root

TABLE IV (cont'd)

ENGLISH	AT	VK
6. *eye*	ina	Mor: ina. Possibility of connection with TNGP forms (kin, tin, si, hi, i, in, il) if one posits loss of initial stop (see also *excreta*, *foot*, where AT could have lost an initial stop)
7. *fire*	ata (also NH)	Kamoro uta, Asienara usa, Konda-Yahadian utaa, Yabi, Simori utu, Moni usa
8. *housefly*	? uhuru (also NH)	Asienara: ohoroboa, goboda (from gohoroboda?)
9. *foot*	idi	Ties in with the TNGP only if a stop (*k) would have been dropped
10. *give*	ni(na), ina	Roots ne, nia, na, nere in south VK Stock, ne, te in Brat, ne, ina in East Strickland Family.
11. *hand*	tana	Karas, Iha tan, Tanah Merah ta, Mairasi tara, Ekagi lane, hane, gane; Ok taiŋ, Trans-Fly: tondo, taeŋ
12. *leaf*	asa(h)	Asmat esena, etena; Asienara ehera (Finisterre Stock: sa, so, sese etc.)
13. *moon*	uru	Kamoro pura, Asmat pira; south VK Stock: puruno, huro, suro
14. *nose*	muni	TNGP forms: mi, iri, mini, minu; in Asmat-Kamoro, south VK Stock, Ok, East Strickland, Awyu
15. *name*	ne(ne)	Iha, Baham: ne, nie; south VK Stock: (n)anai(a)
16. *stand*	nate	Iha, Baham: nander, nandera; Konda-Yahadian: nende
17. *stone*	hele	Dani helep, kelep, East Strickland: kere, Asmat eke, ekere, Awyu iro, egiro, Ba igi, Awin ike, Moni ngele, Uhunduni gela
18. *tree*	ate	Kamoro ote, Asmat os, Ok at, as, Kiwai ota, kota
19. *woman*	? tupuru	Iha tombotombor; Asmat toor, cowoc, taot?
20. *I*	n-	South VK Stock, Asmat-Kamoro Family n-
21. *thou*	e-	South VK Stock, Asmat-Kamoro Family a-, o-.

2.10.1.1.2. *STRUCTURES OF THE WPP LANGUAGES*

This section is concerned with making clear in a brief manner the main differences between the AN languages and the NAN languages of the area with which it is concerned.

2.10.1.1.2.1. The Marks of NAN Structure

The usually accepted marks of NAN structure in New Guinea and the neighbourhood are:

1. A degree of complication in verbal systems in which there may be a few or all of the following features:

(a) distinction of person and number in the subject of the verb, usually by suffixation, but occasionally by prefixation;

(b) pronoun objects may be included in the verbal complex, again usually by suffix, but sometimes by prefixes. Prefixes tend to be commoner in western New Guinea and they are found also in Northern Halmahera (even though there they have actually been written as separate items);

(c) a varying degree of complication of moods and tenses. In the far west this is less than in eastern New Guinea, as a whole, and in NH it is less than on the mainland;

(d) incorporation of adverbial elements into the verb complex: this is more frequent in eastern New Guinea. In NH it does not occur, nor does it appear in AT as a whole;

(e) in some areas, a distinction is made in the form of sentence-medial and sentence-final forms of the verb, which, although morphologically distinguished, function chiefly on the syntactic level. This happens in this region only in Alor.

2. In the noun phrase, certain characteristics appear:

(a) gender systems are usually absent, but noun classes may appear in a few of the more easterly languages;

(b) usually very little provision is made for the distinction of number in the noun; context has to determine this;

(c) a case system signalled by postpositions tends to be present in contrast to the prepositions of the AN languages, but there is a likelihood of prepositions when a SVO order is found;

(d) pronouns may or may not distinguish sex or classes, and the presence of a dual number is less common than in AN;

(e) possession is not usually indicated by suffixed possessives and the possessive classes of AN languages are absent.

3. On the syntactic level, the following points are to be noted:

(a) the usual word order is SOV; some of the mainland languages appear to have SVO, but no detailed study has been made of languages of this type which have been reported (Cowan 1953). In NH and AT, the SOV order is normal;

(b) the complicated paragraph-sentences found in mainland New Guinea (Longacre 1972) are not present in these languages as far as NH and AT

are concerned and are less obvious in western New Guinea than in the Eastern Highlands.

4. A few general details may be added:

(a) numeral systems in AT languages tend to be AN, borrowed from surrounding AN languages. This is not so in NH nor as a rule on the New Guinea mainland. These will not be considered in the present chapter;

(b) there is in all the languages borrowing of AN vocabulary, and this seems to hold good on the mainland as well as on the islands, and in the island region much interchange of linguistic features has occurred, chiefly in vocabulary. Most of this is linked historically with the predominance of some local sultanate in times past - e.g. NH through Ternate and Tidore in the Sula-Batjan area. This can be largely disregarded here, provided it is not overlooked.

2.10.1.1.2.2. Structural Sketch of the Island NAN Languages

These notes are intended as expansions of the preceding section, so far as space will permit; in 2.10.1.1.2.3. similar notes will be given concerning the mainland languages so that comparisons may be made.

The pronouns will provide a starting point which is frequently of importance. Table V shows the pronouns of the AT languages, linking with Table I.

TABLE V: PRONOUNS OF THE ISLAND NAN LANGUAGES

Person	ABUI	BUNAK	MAKASAI	FATALUKO	OIRATA
Sing. 1.	na,nedo	neto	ani	ani(ro)	anri
2.	e(do)	eto	ai	e(ro)	e:ri
3.	he(do)	nimo,homo	gi	tava(ro)	ue
Plur. 1.incl.	pi(do)	i	fi	afi(ro)	apri
1.excl.	ne(do)	nei	ini	ini(ro)	inri
2.	re(do?)	ei	i	i(ro)	i:ri
3.	he(do)	himo,homo	ena	tava(ro)	waye

Notes: 1. In Bunak 3rd person, himo is animate, homo is inanimate, and g- is the object and possessive prefix for both.

2. Lovaea is omitted because the pronouns so far as recorded are AN: au *I*; ou *you*. They seem to link with Biak (AN) (1st person) and Japen (2nd person).

The roots of the pronouns are monosyllabic, with the addition of a suffix in certain cases: Alor -do is a defining marker that with a noun acts rather like a definite article. This seems to reappear in Bunak and Fataluku, d becoming r: the language has no voiced stops. In Oirata -ri is the form, and in the VK languages Kampong Baru -ri is probably comparable; Konda -gi is not formally so but its value is similar. Analyses of these languages are still lacking.

The lack of distinction between singular and plural in the 3rd person in Abui and Fataluku is noticeable. There is also no agreement between the morphemes of the 3rd person in the different languages - which suggests that these are basically deictics of various sorts as not infrequently in languages. It is the first and second person forms that may repay comparison, and there is basic agreement among these in the languages under discussion.

The first person plural is of particular interest. The distinction of inclusive and exclusive is made but seems to be secondary - meaning that the exclusive could be based on the 1st singular, and the inclusive a later development. All the languages of Table V have a first person plural inclusive based on *pi. Strangely enough this form is found in the NH languages also, and is their only agreement with the AT languages. Table VI shows the NH pronoun roots, as they are most easily abstracted from the forms in the various NH languages - the table does not claim to exhibit a proto-NH pronoun set.

TABLE VI: NORTH HALMAHERA BASIC PRONOUNS

Person	Free form	Subject pronoun
Sing.1.	ŋo-hi	to
2.	ŋo-na, ŋa-na	no
3.	una-ŋa	wo (masc.)
	mu(na)ŋa	mo (fem.)
Plur.1.incl.		po, fo, wo, ho
1.excl.	ŋo-mi	mi
2.	ŋi-ni	ni
3.	ana(ŋa)	jo, du, na (personal, masc. fem.)
	(maena)	i, also 3rd sing. neuter

It will appear that once again there is very little in common between AT and NH - less in this case than in the 90-word vocabulary. All that is shared is inclusive plural 1, *pi. If Van der Veen is right, the *pi

is not an original 1st person inclusive at all, but an indefinite (French *on*, English *one*, German *man*, etc.) in an extended use. Van der Veen (1915:186) first shows that po etc. originally had no person value at all, but was for generalised reference, and he translated it into Dutch by *men* or *ge*. He regarded wo as basic (where it is hard to agree with him: po would be more likely) and considered it related to the NH 3rd singular masculine article o and the 3rd plural determinative element in o-na and j-o, as an indefinite demonstrative. Then on the following page he points out that these wo, no forms supply the only inclusive 1st person distinction in NH, and they are used "when the talk is general, and can come to serve as agent marker and may change their function so that finally wo, etc. take the place of a true first person plural."

If this line of argument is accepted, then the NH languages would have originally lacked the inclusive-exclusive distinction. It is still absent in Buru, but there the AN exclusive root kami serves for both. In Hawu, dji is inclusive, ḍi exclusive, a rather narrow distinction that looks like being late. Cowan shows that in Konda the distinction is still not made, and many other languages might be added to the list. The general 'personal' forms became later an exclusive, just as in modern English it is possible to say *we don't do that here* or *one doesn't do that here* with the same general meaning. Further if this po, fo form is rightly identified with AT pi, plural inclusive it would have to be introduced through some NH language. This is possible, but there is no evidence for it, especially with the change of vowel. Yet the comparison seems clear enough, and no other available language - on the New Guinea mainland - shows anything like it.

Although it was suggested a little earlier that the -do suffix on pronouns was a defining marker, there is an alternative and perhaps better possibility suggested by phenomena in Oirata. De Josselin de Jong (1937:204-5) notes two sets of pronouns in this language serving as subjects: a simple prefix, and a prefix plus -te, which could well be cognate with -do. He distinguishes them as "inert" and "energetic" respectively, borrowing terms from an article by Uhlenbeck (1917) on North American languages. For *I sleep*, he gives ante taya or an tayan: the latter is a nominalisation with -n, which he regards as *I am the sleeper*; ante uda *I strike*, but an udan *I am the striker* or *I am struck, someone strikes me*. So an tayan ya:ni *my sleeping is good*, but he says that an udan could only be *I am struck*. All this suggests that the suffixes may really be ergatives. In the ergative languages of Flores and Hawu, word order is different, and the ergative le, ri precedes the postposed subject: Hawu ta toi ri ja *I know it*, where the AN aku > ja *I*. Allowing for the NAN order SOV, the explanation along these lines may be possible.

Bunak pronouns call for some special remarks. The language has a dual, not listed above; the other languages do not. The dual is marked by infixed -l-, and the plural by suffixed -i. So i-l-i is inclusive-dual-plural, *we two inclusive*, and i: *we* (incl.) stands for i-i inclusive plural. In Bunak -to is suffixed only to first and second singular pronouns and these do not occur without it: whatever its value in the other languages, any special force is lost in Bunak. There are also prefixed objects: ne-ge *me-give*, ge-ge *you-give*, he-ge *him-give* (cf. Abui, he 3rd person singular); and possessive root -ie *belonging to*, becomes n-ie *my*; Ø-ie *your*; g-ie *his, her*, of Makasai gi 3rd singular. Bunak also has an irregular hala?i *they two*, for which also g- serves as prefix: hala?i g-ie deu *house of them two.*

Verbal systems are often diagnostic of linguistic grouping. It is therefore useful to look at the verbs in the island NAN languages. This cannot be done in any depth here, but what can be done will show the complete contrast with any AN system, and may suggest also reasons for some irregularities in a few of the AN languages of the region.

Firstly, the stem is practically invariable. A few languages have causative and reciprocal markers but these bear no formal resemblance to the AN morphemes corresponding in function. Time indication by means of inflection is present (though weakly developed) in NH languages, but is absent from the AT languages. Bunak uses prefixed person object markers, but the other languages do not. In Makasai, gi datu ?u lolo *he story one tell* shows the common type; if time has to be marked, an adverb precedes the verb, such as esere *yesterday*, usanana *tomorrow*, or nana?u *continuity*. The negative is noto or noto nai before the verb, varying only into noho *I will not*. Fataluku is similar: again there seems to be no future marker; hai marks a past, as in tava hai atane *he asked*. This past marker occurs in neighbouring AN languages: Tukudede sai, Mambai soi before the verb. In Oirata, however, so marks intention, not a past, as in so anut ina mire *I shall sit here*, and in the same language ro after a verb marks completion: ate an uda ro *you struck me*.

The NH verb is more complicated and has a number of derived forms (Capell 1944:319); tense can be marked though still in a rather vague way: in Loda, to tagi *I go or went*, but complete past, to tagi oka; to adje tagi *I shall go* (Capell 1944:324).

Postpositions are common in languages with SOV order: this was one of the postulates in Greenberg's *Universals of Language* (1963:63). These are discussed in Capell (1944:324).

2.10.1.1.2.3. Structures of the Mainland Languages

The languages referred to here are those of the Vogelkop (VK) and Bomberai Peninsula (BP) to which reference has been made earlier. Very little of positive content can be said about these because empirical data is almost absent. A twenty page typescript grammar of Iha (BP) by Fr Jules Coenen MSC with a vocabulary by the same author presents the outline structure of this language, but for all the others there is practically only such fragments of information as are found in Cowan (1953). What is said here must therefore rest on these sources. Material on Manikion was gathered by Capell in 1964, but has not been published; this language, however, stands quite apart from the groups under consideration - one of the few known VK languages that does so.

In Iha, noun class systems appear, to the extent that qualifiers of a noun carry prefixes grouping them into certain natural classes - fruits, houses, flat things, wooden things, boxes, inanimate things and animate beings. This type of classification is more elaborate than the animate-inanimate division of Bunak, and, for that matter, of numeration systems in various Eastern Indonesian languages that are classed as AN, and there is no phonemic correspondence in the markers. Number in nouns is marked in Iha by reduplication: djə *bird* > djədjə *birds*. This has no parallel in AT languages. The forms of the Iha pronouns bear very little resemblance to those of AT languages:

Sing. 1. on; 2. ko; 3. mi

Plur. 1.incl. in; excl. bi; 2. ki; 3. waatmo, rukno, etermo

with a 3rd plural for animals and inanimates inwaarteŋgodoŋgo, which obviously needs some further analysis.

Apart from details, it seems that Iha marks a first person by n, a second by k and a third by m. This last recalls Bunak himo, homo, animate and inanimate forms of 3rd singular. The form bi for exclusive plural is of interest, in that it recalls the AT pi discussed above, but has reversed its reference - according to the arguments from NH, it ought to be inclusive.

The verb in Iha is morphologically simple, but it is a suffixing conjunction, like that of Kamoro and other languages farther to the east; so far as the AT languages mark person they do by prefix or preposed pronouns. The genitive marker -ma in Iha recalls NH by way of contrast, not AT.

When the languages in Cowan's *Voorlopige Resultaten* (Cowan 1953) are studied, very little appears that can be compared with AT. Diagram A has shown the pronoun initials and how they can be grouped, but this grouping does not carry over well into the conjugation. Ayamaru, for

instance (Cowan 1953:21), shows an inclusive as against exclusive prefix series: n-egias *thou, you, we say*; t-egias *I say*; j-egias *they say* and similarly na-mo *thou walkest*; no-mo *you, we, walk*; ta-mo *walk*; ja-mo *they walk*. The vowel in the second instance may belong to the verb stem. This recalls the verbal processes in Kiwai of the Western District of Papua New Guinea, but it has no parallels in AT or NH. Cowan himself (1953:25) has drawn attention to possible alignments of Ayamaru with the NH languages, and as far as the pronouns go this seems to be right. But his Table on 1953:25 leaves many questions unanswered owing to the uncertainty of the information offered.

These languages, then, as far as can be said at present, do not link up structurally with the island NAN languages to any extent, and in fact hardly above the level of chance agreement, except for the Ayamaru-NH alignment which may have a higher value. The features mentioned above such as classification are all such as might occur elsewhere without historical linkage. A verdict of undecided must therefore be returned on the present evidence.

2.10.1.2. PART II: RE-ASSESSMENT OF AUSTRONESIAN IN THE WEST PAPUAN PHYLUM LANGUAGES

2.10.1.2.0. *INTRODUCTION: THE WORK OF E. STRESEMANN*

There is still another aspect of Austronesian studies which has been to a large extent overlooked or just disregarded by investigators starting from the viewpoint of a common AN element in the Oceanic languages as a whole. Words - and to a degree, constructions - that can be shown to be of AN origin are sought in a language or group of languages. This is not really a full study of a language, for there is hardly ever a case of 100% AN content. Indeed such has never been found and does not seem likely to be found. The percentage AN may be large or small - what happens about the remainder? Usually it is simply discarded. To this extent historical linguists have been rather like chemists analysing a given substance, not to find what it is really made of, but to extract one certain element from it. They take and use the distillate, they discard the basic fluid. But this basic fluid may contain items of value for other purposes: should it not be used? In the present case, once a demonstrably AN element has been found in a language, what can be done with the remainder that is presumably NAN? The question was discussed earlier by Capell (1971) but not actually dealt with. Greenberg (1971) made tentative steps towards it. Is it worth while at this point in the study of WPP to seek some solution of the question in these NAN languages?

On the one hand, all the NAN languages have had contact with AN and show at least loans from that source. On the other hand, all the languages classified as AN have considerable content that is not demonstrably AN. They vary greatly in the AN content they show, both in vocabulary and in structure. It is not part of the present task to subgroup these languages, but it is well worth while trying to pick out NAN elements within them.

The normal continuation of Indonesian studies has brought other facts to light which may have a bearing on the question of possible NAN substrata throughout the eastern or Moluccan section of the archipelago. The languages between Timor and New Guinea have already been mentioned as divergent from common AN forms in many regards. Now a little closer examination must be made.

The languages of Seran form a starting point, because they were examined some fifty years ago by Stresemann, as already indicated, first in his Paulohi Grammar of 1918 and later, under the influence of Dempwolff in his *Lauterscheinungen in den Ambonischen Sprachen* of 1926, in which he dealt in more specialised manner with the historical aspect of the Seran and neighbouring languages as a group. What Stresemann did not bring out clearly in his second work, because he was not interested in it, is the fact that although Seran-Buru languages are definitely AN, and definite rules can be established governing their derivation from a PAN mother tongue, there is still a noticeable residue of vocabulary that is not AN, and some grammatical features that do not link with AN structures as a whole. It may be objected that PAN grammar has not yet been established, and this is true, but there are very clear indications of its general lines, and some of the features to be mentioned here are at variance with this growing picture. The articles by Tauern (1928-31) in *Anthropos* on Seran languages are also useful in these studies.

This, then, is the outline of the questions that are being faced in this section of the chapter.

2.10.1.2.1. *PROTO-SERAN*

Stresemann dealt in detail with the languages of Buru, Ambon and Seran, to a very large extent on the basis of his own fieldwork. For each of these regions he established proto-languages which he called "sub-": Sub-Buru, Sub-Ambon, Sub-Seran. He labelled them SB, SA and SS respectively. The proto-language which he conceived as lying behind these sub-languages he called Ur-Ambon (UA), regarding this as a direct derivative of PAN. He set up for UA a set of phonemes, here reproduced as Table VII, when re-arranged as a comparison with Dempwolff's "Ur-

Austronesisch" (here PAN). The Table as here reproduced does not represent phonemic correspondences. It has recently been suggested that /ə/ is not properly to be reckoned as part of the PAN system (Schuhmacher 1972). Even if this view should be upheld, it does not directly concern the present discussion. It may represent a still older stage of PAN than that contemplated by Dempwolff. The real difficulty attached to Dempwolff's system rests on the absence of fricatives, e.g. /s/ being treated as really /t'/ and /r/ as /ǵ/. Most subsequent students have rewritten Dempwolff's alphabet; the original has been used in the Table to make Stresemann's comparisons clearer. One thing, however, does stand out: the resultant UA system is much closer to the existing systems of the NAN languages of WPP, and this suggests that a more phonemically elaborate PAN has been grafted on to an NAN base that even at that stage was simpler.

TABLE VII: PROTO-AUSTRONESIAN AND PROTO-AMBON SOUND SYSTEMS COMPARED (after Stresemann)

PAN	PA	PAN	PA
ǵ, l, ļ	l	n, ń	n
ɣ	r	p	p
d, d', ḍ	d	b	v
t	t	mp, mb	b
t'	s	m	m
nd		k, g	k
ṇḍ		ŋ	ŋ
ńd'		h	(h)
ńǵ	d	w (v)	w
nt		y (j)	j
ńt'			
Vowels: PAN	i u ə a		
PA	i u (ə) a,o,e		

This part of Stresemann's work, what might be called its positive part, has, of course, no place in a chapter on NAN linguistics of the area. But his work does have a relevance to the present chapter, for an examination of the vocabulary collated by Stresemann shows not only an AN element, with which he alone was concerned, but a common NAN element with which he was not concerned, but which recurs in the wider setting of the NAN features of WPP. It is this common NAN element which is germane to the present enquiry, for it carries further the suggestions made by the present writer in an earlier work (Capell 1971:

323f.) regarding the importance of the study of what might be called comparative NAN within the AN domain - and this so far nobody seems to have taken up.

It does not require much examination of the vocabularies of many languages classed as AN to show that the Indonesian geographical region as a whole is as imperfectly AN as those farther east. Although no detailed study has yet been made, the more superficial examination resting on a 100-word list of some sort, of the lexicostatistical type, shows relatively low PAN content even in areas usually reckoned to be impeccably AN, areas in which there has never been any question raised about the existence of NAN or pre-AN languages. It is true that in these regions the grammatical construction is usually of an AN type. Actually, this is a difficult claim to make, because comparativists have so far fought shy of establishing PAN structure, as against vocabulary. However, certain grammatical features do emerge, and have done so ever since the foundation work of Brandstetter. Therefore it must at present be admitted that the grammatical judgements made here are to a certain extent impressionistic, in that they still lack rigorous proof.

The impression of 'substratum' - whatever its nature and whether it is the right word in this instance or not - was tested by the author by the use of a 100-word list to establish a preliminary analysis and percentage agreements have been set up for certain areas of Indonesia, including some to the west of Brandes' Line in order to demonstrate that the NAN vocabulary is not limited to the eastern regions.

In these examinations, some of the languages normally classed as AN have been included: in the far west, Simalur and Mentaway, in the central area Manggarai, and, as more typically 'Indonesian', Bare'e of central Celebes. With these as background eastern languages were then compared: Buli of southern Halmahera (to contrast with the NAN languages of the NH group), Numfor of northern New Guinea Vogelkop, as representative of languages in this area normally regarded and classified as AN. The examination served two purposes at once: it allowed a count to be made of the words definitely AN according to Dempwolff's lists, and also a comparison of the NAN elements, to see whether there was any sort of agreement among these.

Details on these studies cannot be included here, where it is a matter of 'current trends' in linguistic discovery. They need a fuller space in which to be developed.

So that it may not be thought that the matter of substratum is an idea peculiar to the writer, the latest statement on it by another scholar may be quoted. This is C.O. Dahl, in his *Proto-Austronesian* (1973:54), who at the conclusion of a lengthy chapter on labio-velars as possible elements of PAN, says:

> But a weightier argument comes from the phonetic development of the MN (=Melanesian) languages. I refer to the common merger of many phonemes and to the widespread change from consonantic to vocalic final. Such changes in Malagasy have been shown to have their origin in a Bantu substratum (Dahl 1954:325-62), and the same explanation is likely in Melanesian. Another argument is the clear grammatical difference between the Melanesian and Indonesian subgroups. It therefore seems to me that a substratum hypothesis is not more unlikely than to construct new proto-phonemes from such a scanty material.

Then he adds what cannot be stressed too much, and in the light of the very little that is known about Eastern Indonesia linguistically:

> What is needed is a thorough examination of all the reflexes of the constructed PAN phonemes in these languages, and possibly also a comparative study of the part of the Melanesian vocabulary which lacks cognates in Indonesian. With such a material we should probably get a sober background for a revision of the proto-phonemes if needed.

Mutatis mutandis, the same remarks apply just as cogently to Western Austronesian as much as to Melanesian.

Two facts appear from the present author's study of the PAN content in the eastern Indonesian languages:

1. Most common PAN vocabulary seems to have attained its Oceanic phonetic shape by the time it appears in Eastern Indonesia (i.e. Seran and eastwards). Perhaps even as far west as Celebes this is largely true. Study is needed, but it lies outside a paper on WPP.

2. Non-AN vocabulary in Seran etc. points to a pre-AN stratum that would have existed unless AN represents the first population. The evidence shown here on the basis of Stresemann's work and further studies by Capell makes it more than likely that this is not so, and with the proximity of New Guinea it becomes highly unlikely that it is. Stresemann was not interested in NAN but was examining PAN. His work contains much of the NAN which he disregards. Table VIII presents some 90 words of his Ur-Seran (US) and Sub-Seran, with PAN equivalents printed in Dempwolff's spelling. These show variants from PAN except in some cases where a word is given in brackets in one column, representing the AN derivative present in either of the language areas, e.g. *be big*, PAN ɣaɣa, giving Ur-Ambon (UA) raya, but US ila is not a PAN word.

Even where a word in the lists is PAN, it is often in a form which is Proto-Oceanic rather than PAN, e.g. waga *canoe* is the form commonest in Eastern Indonesian, and in most of Oceania: Grace in his finder-list (1969) gives waŋkaŋ, but it is only in Fiji that waŋga appears, and even there the /ŋg/ is not a retention of PAN -ŋk- as established by Dempwolff, but the prenasalisation of /g/ which Fijian demands. The study of the phonemic forms of AN words in Eastern Indonesian could be very helpful in determining the age of these languages, but it has not been carried out.

The present problem, however, is the NAN vocabulary within these languages. It has already appeared that certain grammatical features of the languages are not found in PAN languages, or in Oceanic languages - noun suffixes of number, adjective agreement, etc. as briefly discussed below. What then of the NAN words in Table VIII? In general, they do not agree with the Timor-Alor or NH lists, but in some cases they extend into parts of Timor where the languages are AN. Such a word as UA dara *earth*, has relatives in Kupang kdale, Kayeli (Buru) raher, and possibly Hawu (wo)rai; Buru iri *foot* is clearly AT idi, but the numbers of NAN cognates among the lists it has so far been possible to examine are very small. Most of the Seran NAN lists seem to have no cognates elsewhere, and it looks as though allowance will have to be made for AN migrants bringing in a measure of unity into a congeries of originally unrelated - or apparently so - languages. The present is a survey paper only; a book will be needed to pass even what material is available in review - and of course this review will need to cover structure as well as lexicon. Part of this subject will be included in another section of this work ((II) 4.5.1. on mixed languages) but even this will be only suggestive.

North and east of Seran also there is connection with the WPP both in vocabulary and probably in structure. For example, words for *dog*: Kilmuri kafuna, Gah kafuni, Ahtiahu awan, Lobo kawuna in the island region, connect with Waigiu dofana, Ansus wona and Kowai awuna on the VK area. The word yai for *father* is found in Liambata (Seran), Watubela and then in Kowiai and Ansus. Further examination will no doubt increase the list of such shared words, parts of WPP but many of them in areas now classed as Austronesian.

TABLE VIII: NON-AUSTRONESIAN VOCABULARY IN THE SERAN AND AMBOYAN LANGUAGES

ENGLISH	PAN	UR-AMBON	UR-SERAN
above	antat′	dətə	lətə
angry	baŋit′		kolake
arrange	dandan		tita
ashes	abu,ḍabuk		lobonə
attack	təmpuh		sali
bad	d′ahat	gavaya	
bamboo	bə(t)uŋ,buluh	tedin,tabalə	
banana	pu(n)ti	(pudi)	telewa
basket	bakul	epo	
bathe	aṇḍu	sugu	voi

TABLE VIII (cont'd)

ENGLISH	PAN	UR-AMBON	UR-SERAN
beach	t'avaŋ	lalat	
beans	ka(ŋ́)k'aŋ	kavuə	vatila
belch	təɣab	tora	
below	babah	ləvu	
betel	d'ambaj,pinaŋ	gamu	
(be) big	ɣaja,laba	(raya)	ila
breast	t'ut'u	pila	
brother (ygr)	a(ŋ́)g'i	wali	wali
cape (land)	hud'uŋ	tətunə	
carry (bring)	baba		ligu
carry (on head)	t'uhun		(solo)
chalk	(k)apuɣ	(apur)	losa
chisel	pahat	(vatete?)	
chop	d'ald'al	tətə	
chop off	k'alk'al	lake	
contents	it'i	tau-ni	
crooked	biŋkuk		səkole
cut off	kəɣət	tətə	tivi
dirty	ḷabu		tati
draw water	a(ń)t'u	tiba	
earthquake	liŋḍuɣ		isu
edge	təpi		lale
empty	puhaŋ	lene	
fat	miń́ak	vələ?	
fear	(ma)takut	(mataku)	dila
finger	daḷid'i	gugu-	
fingernail	(t')ilu	tadigi	
flɣ (vb)	ḷəmbaj	divu	
front	hadəp	mina	
ginger	lija	sevi	
girl	dajaŋ	ma-ruka	
give	bəɣaj	ruke	
gnat	lamuk	səŋət	
go	panav,lakav	lawa	
gong	əguŋ	buku	
grass	dukut	vuta	
hang	gantuŋ,ḷajḷaj	pain	lələu
high	tiŋgi		lətə

TABLE VIII (cont'd)

ENGLISH	PAN	UR-AMBON	UR-SERAN
(be) hot	ləg'av	lea(w) =*sun*	
hungry	lapaɣ	sere	
I	aku	(aku)	aya,yanam
intestines	tinahi	vatuka	
knife	pit'av	kətanə	peitə
know	tahu		tewa
laugh	tava	mali	
left (side)	kiva,viɣi	bali	
(be) long	(p)anḍ'aŋ	nadu	
mat	(l)amak	labu,bailə	
mountain	gunuŋ	urat	tənita
neck	lihiɣ	ənu-	
nipa palm	nibuŋ	bərən	
plain (n.)	pa(n)daŋ		latalə
poison thorn	k'əɣəd		sələtə
prick (vb)	d'uluk	suda	tava
pull	taḷik		lipi
ready, done	t'i(ŋ)kəp	səpu	bəla
resin	damaɣ		aysi
rubbish	t'aḷəp	sira	
send	ki(ḷ)im	katu	
sew	d'ahit		voli
shoulder blade	balikat	sari	
shoulder	kilik,kikil	gege-	
show	tuṅd'uk		tilu
shut (eye)	pəd'am	tadegu	
sick	(ma)t'akit	ma-pələ	
sieve	t'ig'i (vb)	sa-isat (n.)	
sing	hila,ṅaṅi	kabata	
sink	bənəm,ka(ḷ)əm	molo	
slime	luk'ak		tona
smoke	hat'ap,at'u	vənə	
snake	ulaɣ	tobolo-	
sour	at'əm		linu
speak	uk'ap	padepa	
spear	tumbak	toba,galepi	
spittle	ludah	aber	
spoon	t'ənḍuk	sidu	

TABLE VIII (cont'd)

ENGLISH	PAN	UR-AMBON	UR-SERAN
sprinkle	diɣut'	sora	
stand	ḍiɣi	kədə	kələ
swear	t'umpah	soba	
sweep	t'apu	sara	
tabu	pali	tamoli	
tie, bind	d'alin		vole
urinate	miɣmiɣ	tiri	
voice	tənəɣ	liə	
vomit	u(n)tah	muta	
wait	hantaj,tuŋgu	(tugu =*watch*)	lali
wall	diŋdiŋ	rəsət	
wave (n.)	humbak (adj.)	dovu (n.)	
weave	tənun,lag'a	kədə,sedu	
wound (vb)	luŋka	abata(y)	
year	tahun	ŋarəʔ	
you (sing.)	kav	ale	

2.10.1.2.2. *PROTO-SERAN STRUCTURE*

Along with the special nature of the PS lexicon, Stresemann shows that a certain grammatical type occurs in the languages of the same area - in fact, it stretches rather farther than he was able to take into account. This grammatical structure affects almost all the speech categories. Reference to his work needs to be made for a full discussion; only an outline is possible here (Stresemann 1926:139-81):

In the noun phrase the most characteristic feature of these Eastern Indonesian languages is the appearance of noun classes marked by ending. There are no articles, but the noun is marked by endings, which change for the plural; the adjective is similarly marked and there is usually a concord of number between noun and adjective. The actual endings vary (Stresemann 1926:165ff.): in Amahei, Nusalaut, Saparua the marker is -lo which, says Stresemann, is "added to every noun" in these languages, and acts as an enclitic, moving the stress forward. In Liambata and Kobi the ending is -im or -am; if the noun carries a possessive suffix, this ending follows the (AN!) suffix: Liambata *ulu-ni > ul-n-im *his head*;

Kobi *vavu(y) > hah-am *pig*. In Manusela and Hoti the suffix is -a: Manusela ian-a *fish* < *ikan. Here, of course, a different explanation is possible, for iana is a form found in parts of western Oceania. In these cases it has been taken to show supporting of a final consonant by an added harmonic vowel (Ray 1926:46-8, 49-50; Capell 1971:303). In fact this does not seem to be the case, because stem final vowels are similarly supported in Manusela: isu-a *earthquake* for PS isu.

Plurals in almost all Amboyna languages end in -du (Buru -ro, Nuaulu -u). This applies to stems bearing possessive suffixes also: Saparua, vulu-ni-lu *its feathers*. Number is thus marked inflectionally: Paulohi *coconut* nuel-e, plural nuel-a < UA niwər, PAN nijuɣ.

Plural formations for adjectives are limited to what Stresemann calls the "sub-Ambon" languages, e.g. Paulohi *crooked* keru-ti, plural keru-ti-ru with two suffixes; Amahei *full* ponu-i-ro, plural ponu-i-o.

The background of these formations is not PAN, nor, for that matter, is it AT or NH. It would seem to be a local, pre-AN formation, which occurs in Seran-Amboyan, Babar but apparently not in the islands closer to New Guinea. In Goram, however, there are traces of regular suffixing of possessives to noun, as in ilu-mu *your head*.

While most of the pronouns in these Seran languages are AN, they are frequently in very abraded forms, and in some cases not all the pronouns are AN. Examples can be seen in Haaksma (1933:156-66) and have been mentioned above. The 2nd and 3rd person singular are the chief NAN remnants: in Amboyna Asilulu ale *you* and ali *he*. The same forms occur in parts of Seran, but in e.g. Wemale, ahu *you*, and eme *he*, are again different. In southern Halmahera and New Guinea languages the PAN pronouns recur albeit with much phonetic modification.

The possessive inflection has departed from PAN - or preserved an NAN patterning - in these languages. Nouns fall into two classes, prefixing and suffixing. Prefixes are used with inalienable or 'part' nouns, suffixes with all others (those that in Oceanic languages are not suffixing). *Bird's nest* in UA type languages becomes manuʔ ni-ruma *bird its-nest*, not *manuʔ ruma-ni. Stresemann (1926) gives a whole chapter (129-47) to this phenomenon which evidently impressed him, coming from the PAN patterns. In Buru and some other areas, suffixation is absent; a cardinal pronoun is followed by a free possessive and then the noun, which if it was in PAN suffixing, retains the -n of the original -ña 3rd singular in all persons: Buru: jako nau huma *(I) my house*; rine nake huma *(he) his house*; sira nunuk huma *their house*, plural sira nunuk humaro *their houses*. Here there is clearly a combination of an NAN system with a PAN. It is interesting to recall that this structure is found in parts

of eastern New Guinea, in NAN languages, and also in some of the South-eastern Papuan AN (or OC) languages (Capell 1943:231-2).

Person marking in verbs has also been changed from the normal PAN methods in the languages of Buru, Seran and Amboyna and some of the Flores languages (e.g. Sikka). Stresemann gives a good deal of attention to these "fused" forms (1926:118-25) which are characteristic of Seran, Amboyna. The system is basically AN, but sound changes have occurred which leave it very different. There is no great differentiation of markers for tense in these languages, but it is worth noting that in Saparua and Nusalaut a future particle na appears, which plays a considerable part in certain Oceanic languages, e.g. Kuanua of the Rabaul area, New Britain, and Fijian (Haaksma 1933:160).

In the NAN languages, as has been shown, the tendency is to mark person, if at all, by prefixes. In a few cases on the New Guinea mainland person is marked by suffixes, e.g. in Iha. In certain languages of western Timor and Flores, suffixal marking with AN elements is found, e.g. in Kupang, au lako-ŋ *I go*, and these suffixes can be transferred to a syntactically linked morpheme, e.g. W. Timor ka *not* in in ka-n mui fa sanat *he did not do evil*; ko ka-m fe *you did not give*. The similar principle has been used in a more elaborate fashion in Flores languages - see the chapter on Austronesian and Papuan Mixed Languages ((II) 4.5.1.).

2.10.1.3. CONCLUSIONS AND DEDUCTIONS

The purpose of this chapter was to show that the non-Austronesian West Papuan Phylum, already shown to exist, extended beyond the limits of New Guinea into Eastern Indonesia. This it has done, and the NAN languages of that area have been divided into an Alor Group and a Timor Group. In Timor, the Lovaea language of the extreme eastern end of the island seems to stand out as an isolate, although only perhaps because information on it is still inadequate.

The chapter, however, has done something more than this. It has served to show that many features of language within the Indonesian region are very difficult to assign to PAN. Vocabulary and structure both show unassimilable elements. This is more marked the farther east one looks. The language of Hawu (or Sawu) has certainly a majority of AN vocabulary, but its grammar is radically NAN. The facts behind this statement are set out in another chapter in this volume, that on Austronesian and Papuan Mixed Languages ((II) 4.5.1.). In that chapter it will be suggested that throughout geographical Indonesia there is a substratum of NAN language, which has left its traces in the modern languages. Vocabulary that cannot be accepted in PAN (at least as far as Dempwolff's work is concerned)

is found in large numbers of languages. This is particularly noticeable in the Seran-Amboyna area, but is present also in the small islands east of Timor (Babar, Liang, Sermata, etc.) quite apart from the known Makasai colony on Oirata. The writer feels that similar investigation is needed in the west also, especially in the islands west of Sumatra - Enggano, etc. Much of the work of Dutch scholars whereby these languages have been fitted into the PAN framework is really misdirected.

The languages of Flores, dealt with in the chapter on Austronesian and Papuan Mixed Languages ((II) 4.5.1.), are a case in point. Vocabulary borrowing has been heavy, but there is much that is NAN, and much of the structure is quite foreign to PAN patterns. In the case of Sawu in particular, the language has been classed by everybody since Kern's work, as belonging to the Bima-Sumba subgroup, when in point of fact it is no more Austronesian than English is Romance. There is a whole pre-AN linguistic world swamped beneath the later AN flood, only parts of which it may be possible to recover now. The previous pages have shown in a number of cases that the necessary information on which to base definite conclusions is just not available, and still needs to be sought. Perhaps the next stage of research in this part of the now AN territories is the re-examination of neglected languages.

In their brief treatment of southern Halmahera languages, Adriani and Kruyt (1911, Vol.III:307f.) are in trouble about a frequent final -o in Buli, which in this group of languages seem to be a suffix petrified on a number of words, many of them PAN, e.g. golo *tail* (< ikuɣ); pero *lip* (< bibiɣ), others NAN, e.g. hnjao *belly*, papleo *tongue*, kakamo *armband*. In his later grammar Maan (1951) is not really clearer about it; he says that "probably the o is not to be taken as a 3rd person pronoun but rather as an article". In point of fact such words seem to carry vestiges of the Seran noun-ending discussed above, no longer active as such. In this case, the South Halmahera languages were once part of the pre-AN Seran-Amboyna field. Like those languages, Buli has two noun classes, as in Seran: sma:t ni-wil-o *man his-lip*-noun, or, without noun ending, ai ni tipa *tree its-sprout* - and in true AN one would expect both *wil(i)ni and *tipa-ni with the suffix -ni < -ña.

The earlier limits of the WPP and the languages embraced in its area, may not be possible of discovery, but much more could yet be found about its present content.

Late Note: The picture of the Alor-Timor languages has become more complicated through a reference made in Anceaux (1973) to some earlier work done by an unnamed Dutch official in 1914, who gave some 300 words in three dialects of Alor, all different from Alor, and one showing distinct

Austronesian influence, agreeing generally in its form with the Seran language group discussed by Stresemann (1926), and by a few notes on Pantar published by Watuseke in 1973. The distribution of this new material is roughly as follows: in the source pointed out by Anceaux are included Alorese which is not Abui, though related to it, "spoken in the coastal stretch of the Alor district" - and this is the dialect with considerable Austronesian content in vocabulary though apparently not in morphology - Kui in the districts of Kui, Mataru and Batu-lolong, and Kolana, in the districts of Puremam and Kolana. A short list has been sent recently to Capell by Myron Bromley (who has worked for years among the Dani of the Baliem Valley, New Guinea) which he received from a teacher employed by the Indonesian Government but of Abui origin, coming, however, from Mataru district. His language as a whole is much nearer Nicolspeyer's Abui than the earlier Kui. All of this indicates both the needs for and the direction of future work in the Alor area. No attempt has been made to include these vocabularies in the present work. It does not seem that they would alter the final picture presented.

Editors' Note 3:

As has already been pointed out in the Editors' Note to 2.10.1.0.2., W. Stokhof and H. Steinhauer have recently assessed the language situation in the Alor-Pantar area (Stokhof 1975) and established the existence of twelve Papuan languages there which together constitute a stock-level family within the sub-phylum-level Timor-Alor-Pantar Stock of the Trans-New Guinea Phylum. The present classification of the stock is therefore as follows (for the location of the stock see Map II in 1.3.4. in this volume):

Timor-Alor-Pantar Stock	175,000?
1) Bunak family-level Isolate (in central Timor)	80,000?
2) Makasai family-level Isolate (in north-eastern Timor)	10,000?
3) Oirata family-level Isolate (on Kisar Island, off the north-eastern point of Timor)	3,000?
4) Fataluku (Dagodá) family-level Isolate (in the extreme north-eastern part of Timor)	5,000?
5) Lovaea family-level Isolate (in north-eastern Timor)	1,000?
?6) Kairui family-level Isolate (in north-eastern Timor, west of Makasai)	1,000?
7) Alor-Pantar Family	75,000?
Lamma (on Pantar)	10,000?
Tewa (on Pantar)	5,000?
Nedebang (on Pantar)	1,000?
Blagar (on Pantar)	11,000?
Kabola (on Alor)	7,000?
Kelon (on Alor)	5,000?
Kafoa (on Alor)	1,000?
Kui (Kiraman) (on Alor)	4,000?
Abui (on Alor)	12,000?
Woisika (on Alor)	8,000?
Kolana (on Alor)	8,000?
Tanglapui (on Alor)	3,000?

Explanatory notes: 1) The figures of speakers of the individual languages of the Alor-Pantar Family and the other figures given are only very approximate and highly tentative estimates.

2) Capell (see 2.10.1.1.1.3. and 2.10.1.1.1.5.) points out the relatively isolated nature of Lovaea within the Timor-Alor languages. However, the available material seems to suggest that its inclusion into the Timor-Alor-Pantar Stock as a family-level isolate may be justified and that this would be preferable to its possible alternative classification as a stock-level (sub-phylum-level) isolate within the Trans-New Guinea Phylum.

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2.10.2. WEST PAPUAN PHYLUM LANGUAGES ON THE MAINLAND OF NEW GUINEA: BIRD'S HEAD (VOGELKOP) PENINSULA

C.L. Voorhoeve

2.10.2.1. INTRODUCTION

The original set-up of this section was to give a survey of the languages of the West Papuan Phylum located on the mainland of New Guinea and on Yapen Island in much the same way as this has been done for the languages of the Trans-New Guinea Phylum in 2.6.2.2. in this volume. Recent research by the present writer however has made it clear that the languages along the south coast of the Bird's Head and in the western part of the Bomberai Peninsula belong to the Trans-New Guinea Phylum and not to the West Papuan Phylum as posited by Cowan (see 2.6.2.3.). It further became clear that if the West Papuan Phylum was interpreted as a phylum in the lexicostatistical sense, several languages had to be dropped from it.[1] These are the Meax, Meniŋgo and Mantion languages in the eastern phylum (see 2.14.3.1.), and the Yava language on Yapen which is a member of the Geelvink Bay Phylum (see 2.14.3.2.). The remaining languages of the old West Papuan Phylum on the mainland[2] seem to lexicostatistically form a phylum, and it is to these languages that the name West Papuan Phylum will here be restricted.

Very little is known in detail about the languages of the West Papuan Phylum. The present survey is based on Cowan's survey of 1953 supplemented by lexical materials from Anceaux' notebooks[3] and the few notes on the Brat language by Elmberg (1955). General information on the languages of the phylum and short comparative word lists can be found in Voorhoeve 1975.

The West Papuan Phylum consists of one super-stock (for the definition of this term see 2.2.5. in this volume) and two stock-level

Voorhoeve, C.L. "The West Papuan Phylum: Vogelkop". In Wurm, S.A. editor, *New Guinea area languages and language study, Vol. 1, Papuan languages and the New Guinea linguistic scene.* C-38:717-730. Pacific Linguistics, The Australian National University, 1975. DOI:*10.15144/PL-C38.717*

families. The super-stock is the Bird's Head Super-Stock; the two stock-level families are the Amberbaken Family and the Borai-Hattam Family. The last mentioned family has only been tentatively included as a member of the West Papuan Phylum, and has therefore been given sub-phylic status.

For a map of these families see the Family Map included with 2.6.2. in this volume (see 2.6.2.1.).

2.10.2.2. THE BIRD'S HEAD SUPER-STOCK

2.10.2.2.0. This super-stock is made up of three language families, the West Bird's Head Family, the North Bird's Head Family, and the Central Bird's Head Family. The North and the Central Bird's Head Families together form the Central Bird's Head Stock. The inter-family cognation percentages, ranging from 12 to 15%, are near the lower limit of stock-level relationships. The West Bird's Head Family has cognation percentages averaging 10% with the other two families. Individual percentages range from 6 to 15%, and the three families together seem to form a group on an intermediate level between stock and phylum.

2.10.2.2.1. *THE WEST BIRD'S HEAD FAMILY*

The family occupies the western part of the Bird's Head as well as the eastern part of the island of Salawati opposite the Bird's Head's western shore. There are six member languages: Kuwani, Tehit, Kalabra, Seget, Moi, and Moraid. The total number of speakers is estimated at 15,000; no figures are available for the individual languages.

Some grammatical notes and general information on Moi, Moraid, and Kalabra can be found in Cowan's survey; further lexical data in these languages appeared in his later comparative work (1957, 1958, 1960, and 1963). Galis 1955 contains short word lists in Kalabra, Moi, and Moraid, and Wurm 1971 gives a first tentative classification of these languages as a family.

Kuwani is known through only one word list; the exact location of the language is not known, but judging from its vocabulary it should be in the south-eastern corner of the family's territory, near the phylum border with Konda. Kuwani shares more than 50% cognates with Kalabra and Tehit; together they form a subgroup within the family.

Tehit is spoken in the interior north of Konda in at least eight villages. There is no information on dialects.

Kalabra is spoken in the coastal area to the west of Konda.

Seget is spoken in the westernmost tip of the Bird's Head. It has obviously been influenced by its north-eastern neighbour Moi with which it shares about 50% cognates, whereas the percentages with the other members of the family lie around the family-stock level border (25% with Moraid, 28% with Kuwani, 30% with Tehit, and 34% with Kalabra).

Moi is spoken in nearly the whole north-western half of the family's territory, including the south-eastern side of Salawati Island. On Salawati, two dialects are spoken, Waipu in Waipu village, and Mosana in the villages Waliam and Yefbo. The dialect situation on the mainland is unknown. Moi shares between 35-40% cognates with Moraid, Tehit, Kalabra, and Kuwani.

Moraid is spoken in the interior east of Moi, and north of Kalabra and Tehit. It shares 50% cognates with Kalabra, 45% with Kuwani, and 30% with Tehit. Moraid is aberrant in that its cognation percentages with the languages of the south Bird's Head Sub Phylum (Trans-New Guinea Phylum) are generally higher than those of its fellow family-members whereas its cognation percentages with the languages of the Central Bird's Head Family and with Amberbaken are lower.

The languages of the family have personal pronouns in three persons, singular and plural. Tehit, Kalabra and Moraid have inclusive and exclusive forms in the 1st person plural. Characteristic for the 1st and 2nd person singular pronouns are the initial consonants t- and n- respectively.

	Kuwani	Tehit	Kalabra	Seget	Moi	Moraid
1 p.s.	tetlke	tet	tet	tet	tit	tit
1 p.pl. in.	?	faf	titareno	mam	mam; pa	tebok
ex.	?	mam	wawehin-kapeda			papetebo
2 p.s.	?	nen	nin	nen	nin	nagumere
2 p.pl.	?	nan	namano-nin	nan	nan	metobou
3 p.s.	?	wow	namano	gao	wa[4]	nik
3 p.pl.	?	naneke[5]	norok	kwagay	mieja[6]	mona

The verb in these languages takes prefixed subject markers. Imperative markers follow the verb stem, but probably are separate particles, not suffixes. Some of the verb forms noted seem to

contain suffixes, but their function could not be identified. Some examples: *eat*, Tehit: n-atni, t-atni (with prefixed subject markers n- (2nd p.s.?) and t- (1st p.s.?) and probable suffix -ni); Kalabra n-at-kalen. Imperative forms in Moi: dahok-se *swim*; n-um-se *cry*; leve-se *see*. This se could be a separate particle since it can be separated from the verb stem by the object which in these languages follows the verb. Thus, the word order in the verbal sentence--at least in the very few examples reported--is Austronesian: (S)-V-O. Examples: Moi n-arik sagusu matu *chop its head off* (matu seems to be a hortative particle); Moraid n-ala-no m-sawag, Kalabra n-ala u-safas *chop its head off* (m- and u- are possessive prefixes 3rd p.s.); Moraid n-ju garawag se *fry the fish!*.

2.10.2.2.2. *THE CENTRAL BIRD'S HEAD STOCK*

2.10.2.2.2.1. The North Bird's Head Family

This family stretches over the western part of the Tamrau mountains in the north Bird's Head, and along a considerable part of the north coast. There are two member languages, Karon Pantai along the north coast, and Madik in the interior. The total number of speakers is likely to exceed 5,000; figures for the individual languages are not available.

Some notes on Karon and Madik have been published by Cowan (1953) and some lexical data appeared in his later publications (1957, 1958, 1960, and 1963). A tentative classification of the languages was given by Wurm (1971).

The pronouns in Karon and Madik are:

	Karon	Madik
1 p.s.	tat, yat, ji[7]	ji
1 p.pl.	men	men, mum[7]
2 p.s.	nan	nan
2 p.pl.	nin, nun[7]	nun
3 p.s.	ne, an, yetu[7]	yetetu, yaome[7]
2 p.pl.	yetu, an, anatuh[7]	letatu, yaome[7]

The pronouns of the 1st and 2nd person are similar to those in the languages of the West Bird's Head Family. In Karon, possessive prefixes t- (1st p.s.) and n- (2nd p.s.) have been noted with kinship terms: tabai *my father*; nambai *your father*.

Verbs: There is evidence that subject markers are prefixed to the verb stem. The imperative marker su in Karon is a separate particle following the verb, as in Moraid se.
Examples: *Come!* Karon ma su! Madik na-ma; *Sit!* Madik na-ti! Karon mə-ti [= *let's sit down (?)*]; *Speak!* Madik na-tam suk, Karon na-ski su.

Work order in the verbal sentence follows the Austronesian pattern: Karon uŋgwa kue su, Madik umbah kui *fell (the) tree!*

2.10.2.2.2.2. The Central Bird's Head Family

The Central Bird's Head Family occupies a large area in the interior of the Bird's Head, from the Tamrau Mountains in the north to the southern coastal plain. There are two member languages, Karon Dori and Brat. Karon Dori is spoken by about 5,000 people living in the Tamrau Mountains. Brat, with over 15,000 speakers, centres round the Ayamaru Lakes. The two languages are closely related, sharing 80% cognates.

Brat is reported to be spoken in nine dialects (Elmberg 1955). In earlier literature the names Ayamaru, Aitinyo, Mogetemin, and Meybrat have been used to refer to the Brat language.

Some grammatical notes on Brat can be found in Cowan 1953 and in Elmberg 1955. Some lexical data appeared in Cowan 1957, 1958, 1960, and 1963.

The pronouns in Brat and Karon Dori are:

	Brat	Karon Dori
1 p.s.	tio, co, jio[8]	tuo
1 p.pl.	anu, amu[8]	anu(fe)
2 p.s.	nio	nuo
2 p.pl.	anu(ta)	anu(beta)
3 p.s.(masc)	ait	ait, aik[8]
(fem)	au	?
3 p.l.	ana(weto),[8] ra(weto)	raim, raino, rena,[8] anata

The system is similar to the pronominal systems of the West Bird's Head and North Bird's Head Families. Here too, the characteristic consonants of the 1st and 2nd p.s. pronouns are t (c, j) and n. The corresponding possessive prefixes are t-, n-. Elmberg gives the following series: t-aja *my father*, n-aja *your father*, y-aja *his father*, m-aja *her, their father*, n-öja *our, your* (pl) *father.*

Nouns denoting human beings can take a pluralizing suffix -na: tio t-aja-na *my* (classificatory) *fathers*.

Verbs take prefixed subject markers; these show in Cowan's data only a distinction between 1 p.s., 3 p.s., and the rest (but 3 p.pl. forms are lacking in the data): *I am speaking* etc. Brat: tio tegias, ait yegias, nio/amu/anu negias. Elmberg gives a similar paradigm for the verb *to whistle* and a more elaborate one for *to die*; tio t-xabo, ait y-xabo, nio/amu/anu/ana n-xabo *I am whistling* etc.; tio te-xai, nio/amu ne-xai, ait ye-xai, au/ana me-xai, anu bö-xai *I am dying* etc. (the last form is 2nd p.pl.). Elmberg further mentions an 'infinitive' form marked by ne-, a 'participial' form marked by ma-, and a completive aspect form marked by a suffix -ox. Cowan's data contains an intended action form with a suffix -bo. Thus, verbs in Brat take prefixes as well as suffixes. There are no data on the verb structure of Karon Dori.

The few examples of sentences in Cowan and Elmberg show an Austronesian word order and prepositions instead of postpositions: tio tegias-bo ka nio *I want to talk to you*; ne ke tio *give (it) to me*; tio temo nepam maru *I'm going from the lake*; nagus syox *fry (the) fish*.

2.10.2.3. THE AMBERBAKEN STOCK-LEVEL FAMILY

The Amberbaken Family occupies the area between the north-western border of the Central Bird's Head Family and the north coast. In the west it borders on Karon Pantai, in the east on Meax. There are two member languages, Amberbaken in the north-west of the region, and Kebar in the south-east. They are closely related, perhaps even to the extent that they could be considered dialects of one language, but the only available word list in Kebar is too short to draw firm conclusions. The total number of speakers is more than 5,000. Published data are restricted to Amberbaken; a few vocabulary items in this language can be found in Galis 1955 and in Cowan 1958.

The pronouns in Amberbaken are:

1 p.s.	in	2 p.s.	nan	3 p.s.(masc)	yeta
				(fem)	(y)en
1 p.pl.	in, (y)ek	2 p.pl.	nen	3 p.pl.	yeta atitin

The 2nd person pronouns follow the pattern common to all the languages of the Bird's Head Super-Stock; the 3rd person pronouns resemble most closely those of Karon Pantai and Madik, and to a lesser degree those of Brat with which they share the features of gender

distinction within the 3rd p.s. The 1st person pronoun forms are restricted to this family, as they lack the characteristic alveodental stop in the singular and the bilabial nasal in the plural form, both common to the languages of the Super-Stock.

What little there can be said about the verb in Amberbaken is that it takes prefixes, presumably subject markers, but these have not been entered in the word lists. A few of the verb forms noted contain possible prefixes, he-, n-, an-, aŋ-: hesakwen *see*, heinau *stand*, henu *walk*, hetapereke *cry*, an-una *come*, andet *eat*, aŋbweba *speak*, aŋnot *see*.

Structurally, Amberbaken seems to tie in closely with the languages of the super-stock; on the lexical level however the ties are weak. Amberbaken shares an average of 12% cognates with the neighbouring Brat and Karon Dori languages, but this percentage is most likely inflated by borrowing. The cognation percentages shared with other languages of the super-stock are much lower: an average of 6% with those of the West Bird's Head Family, and 5% with Madik and Karon Pantai. With the Borai and Hattam languages the average cognation percentage is 7%.

On the other hand, Amberbaken shares 6% cognates with Yava, a language which has maximally 3% cognates with the languages of the super-stock and has a completely different set of pronouns, although its verb morphology is also prefixing. Yava also has an unexpectedly high number of cognates with a few other languages along the north coast of New Guinea, i.e. with Borai and Hattam of the West Papuan Phylum and with the languages of the Sentani Stock (Trans-New Guinea Phylum)(see 2.14.3.2.2.). It is possible that these percentages reflect a contact of some sort between Yava and these coastal languages, but at present it is impossible to determine the true nature of their relationships because of the paucity of data.

2.10.2.4. THE BORAI-HATTAM SUB-PHYLUM LEVEL FAMILY

The Borai-Hattam Family is found in the north-east corner of the Bird's Head where it constitutes a deep wedge between the Meax and Mantion languages of the East Bird's Head phylum-level Stock (2.14.3.1.). There are two member languages, Borai and Hattam. Borai is spoken in a few coastal villages immediately south of the township of Manokwari. It is surrounded by Hattam which occupies the rest of the family's territory. The total number of speakers exceeds 9,000. There are no published materials in Borai or Hattam; the present writer used word lists kindly made available to him by J.C. Anceaux.

The personal pronouns in Borai and Hattam are:

	Borai	Hattam
1 p.s.	dan	dani
1 p.pl. in.	niwab	mieni
ex.	ŋian	nieni
2 p.s.	nan	nani
2 p.pl.	sien(a)	ceni
3 p.s.	ne, niu	no, noni
3 p.pl.	nateŋoto	teŋoto, teto

The first and second person singular pronouns tie in closely with those of the Bird's Head Super-Stock languages; the set as a whole is most similar to the pronoun sets of Karon and Madik. Verbs in Borai and Hattam take prefixes, presumably subject markers.

The Borai-Hattam Family presents the same problem as Amberbaken with regard to its relationships with Yava. While the structural data link it with the Bird's Head Super-Stock, the lexical data are strongly in favour of a link with Yava. Cognation percentages with the Super-Stock languages and with Amberbaken range from 4 to 7%; between Yava and Borai we find seven cognates, two of which are verbs, and between Hattam and Yava ten cognates, six of which are verbs. However, cognation percentages with the other languages of the Geelvink Bay Phylum (Tarunggare, Baropasi, Bauri, see 2.14.3.2.) range from 1 to 4% only. Since the lexical affinities between Borai and Yava possibly reflect a borrowing relationship, less weight has been given to these than to the structural affinities which tie Borai and Hattam in with the West Papuan Phylum. The status of the family as a member of the West Papuan Phylum however will remain uncertain until more data have become available, and in view of this, it has, for the time being, been given sub-phylic status within the phylum.

N O T E S

1. Cowan's use of the term phylum did not imply any particular level of lexicostatistical relationship; for him, the term indicated a group of languages which were possibly remotely related since they showed more-than-chance lexical correspondences (see for instance Cowan 1958). To define subgroups in his West Papuan Phylum, he used structural criteria: prefixing versus suffixing verb morphology, and similarities in pronominal systems.

The Trans-New Guinea Phylum, as originally proposed, also did not imply any particular lexicostatistical level of relationship (McElhanon-Voorhoeve 1970:102 footnote). The possibility that the Trans-New Guinea Phylum was also lexicostatistically a phylum was left open by the authors. This seems now to be true for the majority of the languages for which Trans-New Guinea Phylum membership has been claimed.

2. Whether the Papuan languages of North Halmahera also belong to the lexicostatistically redefined West Papuan Phylum remains to be investigated; the possibility that the Papuan languages of Timor and Alor belong to the Trans-New Guinea Phylum has already been discussed in 2.10.1.1.1.5. and in 2.5.3.3.2. and 2.5.4.2.1.

3. See 2.6.2.1. in this volume.

4. Different forms in different word lists. Also: nayanji, anio, zinen.

5. Different forms in different word lists. Also: iit, ieteke, nahrakomona, ventanai, wou, weteke.

6. Different forms in different lists. Also: nayanji, meanie, meyeanjidik.

7. Forms from different word lists, probably representing dialect differences.

8. Forms from different lists, probably representing different dialects.

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P A R T 2.11.

THE SEPIK-RAMU PHYLUM

2.11.0. THE SEPIK-RAMU PHYLUM

D.C. Laycock and J. Z'graggen

2.11.1. GENERAL REMARKS

The second largest linguistic grouping in the New Guinea area, the Sepik-Ramu Phylum, was first proposed by Laycock (1973), on the basis of three survey fieldtrips (1959-60, 1967, 1970-71) in the Sepik-region. Previous studies by Laycock (1965a, 1968) had documented some of the small-scale linguistic relationships in the Sepik region, while Z'graggen (1971) established the existence of a Ramu Phylum (now a part of the Ramu Super-Stock). The possible relationship of Ramu Phylum languages to at least some Sepik languages was first suggested by Z'graggen, and this relationship - as well as further relationships - became apparent to Laycock during his fieldwork in 1970-71.

Owing to the large number of languages included in the Sepik-Ramu Phylum (almost one hundred languages, many of them still poorly recorded), detailed lexicostatistical studies have not yet been carried out, except for parts of the Ramu Sub-Phylum (Z'graggen 1971) and the Ndu Family (Laycock 1965a). However, the family relationships are fairly apparent from simple inspection of the data, and the combining of families into stocks, while there may be errors of detail, still represents fairly certain genetic groupings. At higher levels, however, there remains room for doubt on the exact degree and nature of the relationship. Three super-stocks are postulated by Laycock (1973), and a fourth is added in this article; to account for higher-level resemblances between groups, these are further combined into sub-phyla (for a definition of these terms see 2.2.5. in this volume). The relationship between different sub-phyla is however at present somewhat tenuous, and is based more on typological features than absolutely documentable lexical criteria - though some widespread lexical sharing is also apparent. The possibility remains that some of the sub-phyla - especially the aberrant ones

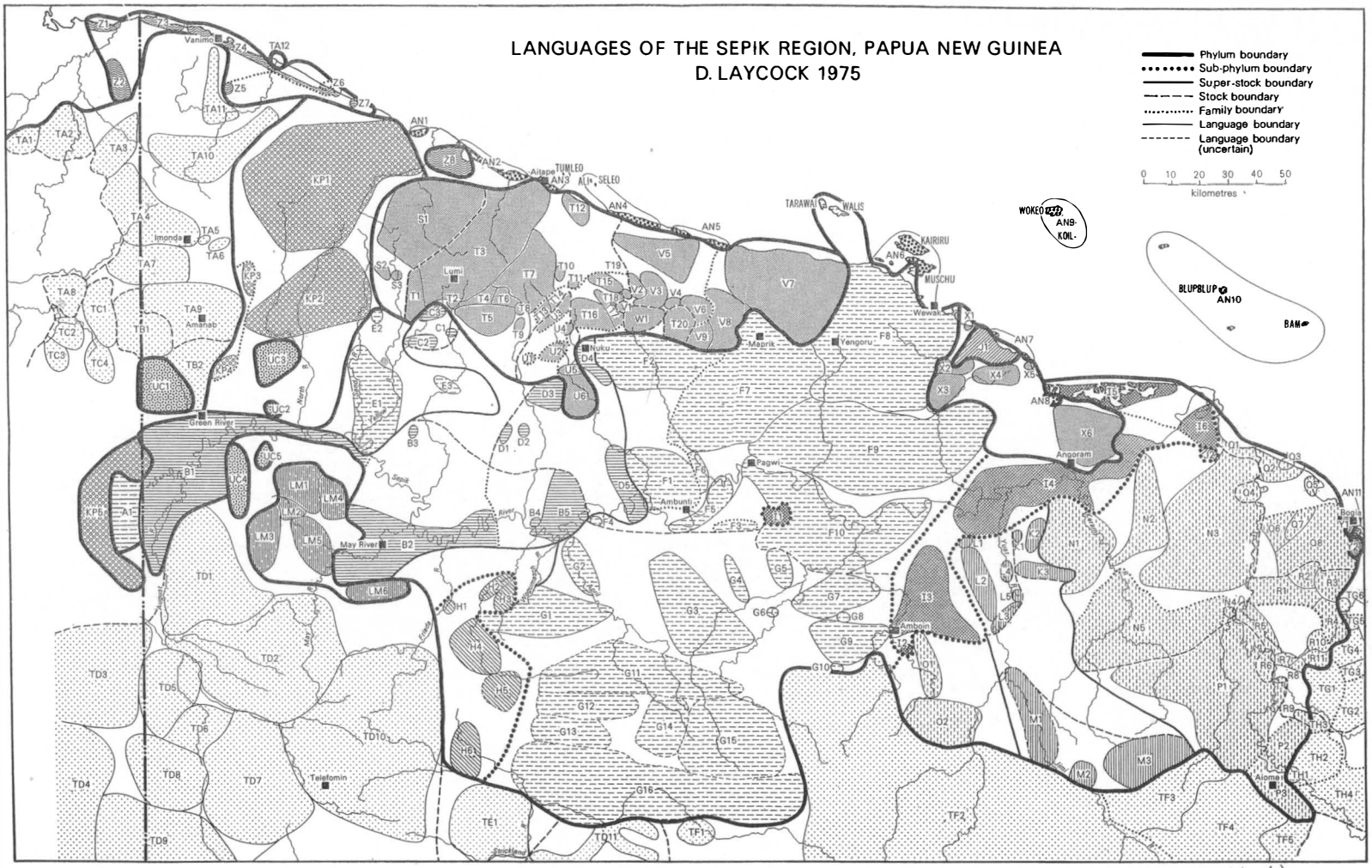
Laycock, D.C. and Z'Graggen, J. "The Sepik-Ramu Phylum". In Wurm, S.A. editor, *New Guinea area languages and language study, Vol. 1, Papuan languages and the New Guinea linguistic scene.* **C-38:731-766**. Pacific Linguistics, The Australian National University, 1975. DOI:*10.15144/PL-C38.731*

(Leonhard Schultze, Gapun, and Lower Sepik) - represent unrelated groups that have been overlaid by 'Sepik-Ramu' typological and lexical features. Laycock feels, however, that the aberrant sub-phyla are in fact genetically related to the other languages of the Sepik-Ramu Phylum, and that their aberrant features derive either from early splitting-off from other languages of the group, or from absorption of or contact with speakers of unrelated languages, or from any combination of these possibilities.

Owing to the diversity of languages making up the phylum, it is hard to lay down features that characterise the phylum as a whole. Nevertheless, the following phonological and morphological features are widespread throughout the phylum, and are found in a majority of the languages which comprise it:

- low number of vowel phonemes: never more than seven, and frequently as low as three, with widely-varying allophones (see Laycock 1965a, Pike 1964)
- occurrence of a schwa-phoneme which is only quasi-phonemic, and which functions in many instances simply as an automatic separator of heterorganic consonants
- frequent occurrence of a palatal series in stops and nasals
- very infrequent occurrence of a voiced/voiceless distinction in consonant phonemes (basic opposition being between plain and prenasalised stops)
- no vowel sequences (if [i] and [u] are treated as consonantal phonemes /y/ and /w/)
- lack of complex suprasegmental systems
- nasal vowels rare
- fairly transparent affixation, with few complex morphophonemic changes
- predominance of suffixation in morphology
- strong tendency for indication of subject in verbs (by suffix), with object-marking less frequent
- sentence-medial verb marking rudimentary or absent
- widespread occurrence of a two-gender system in nouns and pronouns, with (rarely) cross-cutting noun-classification systems (perhaps a substratum feature).

Widespread lexical cognates include a form of the type *nyan *child, human being*, and forms of the type *ndV or *mbV *man* - these last forms being apparently derived from deictics indicating *that one there*. Pronoun roots show widespread cognacy, if one is allowed to compare pronouns with different referents with each other. In Iatmul (and other Ndu-Family languages) we find wun '1st sg.', whereas in Miyak (Yuat Family) we find wun '3rd sg.', and in Kambot (Grass Family) we have wun '2nd pl.'.



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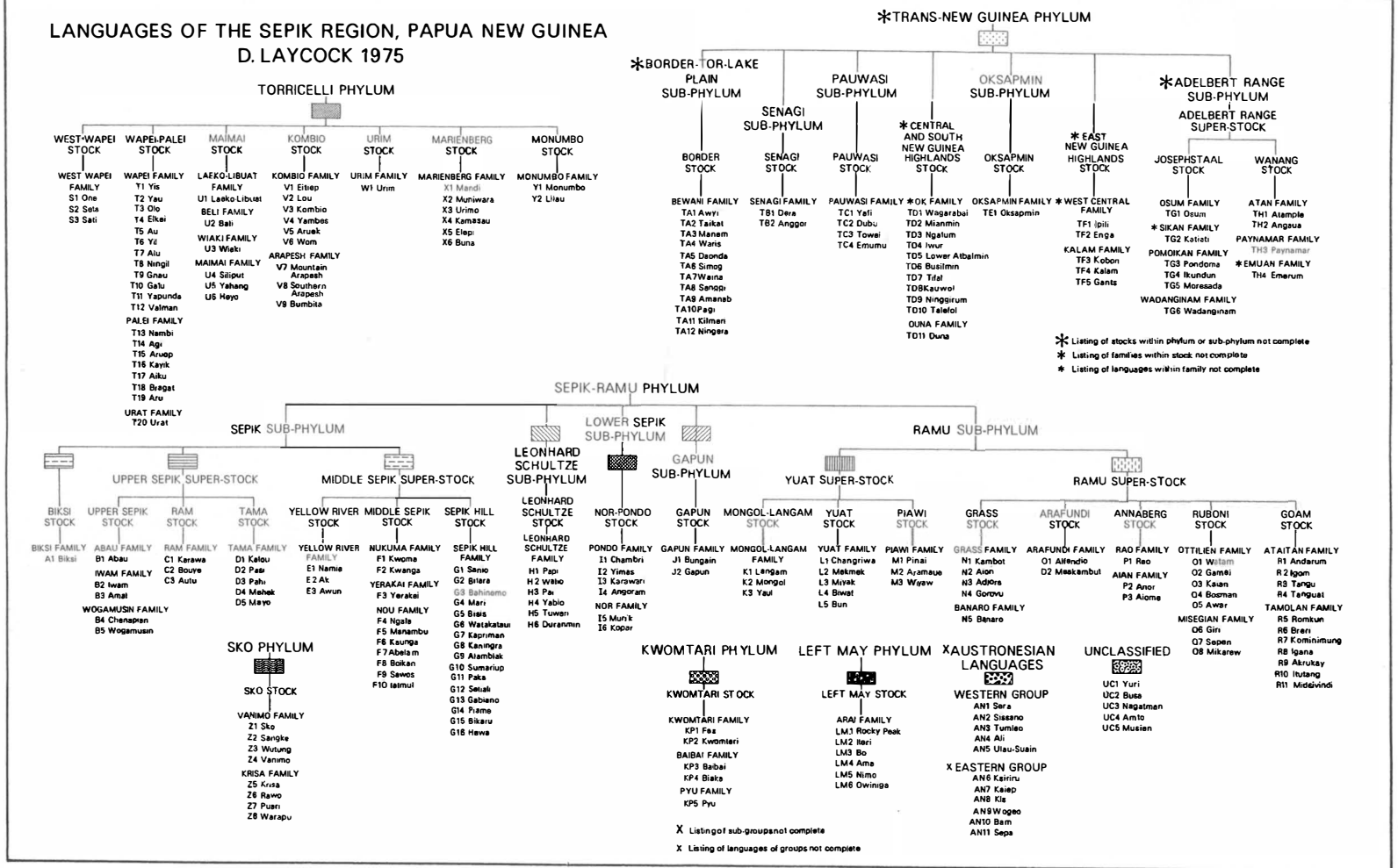
LANGUAGES OF THE SEPIK REGION, PAPUA NEW GUINEA
D. LAYCOCK 1975



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Similarly, we find Kambot ñi '1st sg.', Ak (Yellow River Family) ni *you* (sg.), and Iatmul nyin *you* (f.sg.). Laycock (1973:58) suggests as a possible explanation of this phenomenon that the proto-language may have had a more restricted pronoun set (perhaps three pronouns only, with no number or gender distinctions), and that the system may have been expanded by borrowing from other languages.

Details of less widespread features are given in the discussion on individual groups and languages below. The full details of locations of the individual languages (with village index) can be found in Laycock (1973); see also the map of languages of the Sepik region with this chapter.

2.11.2. COMPOSITION OF THE SEPIK-RAMU PHYLUM

The full composition of the Sepik-Ramu Phylum (194,242), as at present postulated, is as follows (with numbers of speakers as of 1971, except where queried):

SEPIK SUB-PHYLUM				133,412
Biksi stock-level Isolate			200	
Upper Sepik Super-Stock				15,086
Upper Sepik Stock			8,685	
Iwam Family		3,585		
Iwam	3,197			
Amal	388			
Wogamusin Family		555		
Wogamusin	368			
Chenapian	187			
Abau family-level Isolate		4,545		
Ram stock-level Family			941	
Karawa	44			
Bouye	520			
Autu	377			
Tama stock-level Family			5,460	
Mayo	599			
Pasi	161			
Pahi	544			
Mehek	3,336			
Kalou	820			
Middle Sepik Super-Stock				118,126
Yellow River stock-level Family			3,479	
Namie	3,012			

Ak	83		
Awun	384		
Middle Sepik Stock			107,649
Yerakai family-level Isolate		390	
Nukuma Family		16,170	
Kwoma	2,865		
Kwanga	13,305		
Ndu Family		91,089	
Abelam	39,290		
Boiken	30,528		
Iatmul	9,842		
Manambu	2,058		
Sawos	9,005		
Kaunga	230		
Ngala	136		
Sepik Hill stock-level Family			6,998
Kaningra	359		
Alamblak	1,107		
Kapriman	1,439		
Watakataui	160		
Sumariup	65		
Bisis	395		
Mari	120		
Bahinemo	433		
Bitara	178		
Sanio	644		
Setiali	200?		
Paka	100?		
Gabiano	98?		
Piame	100?		
Hewa	1,500?		
Bikaru	100?		

LEONHARD SCHULTZE SUB-PHYLUM-LEVEL FAMILY			747
Walio	142		
Pai	208		
Yabio	100?		
Tuwari	122?		
Papi	75		
Duranmin	100?		

LOWER SEPIK (OR NOR-PONDO) SUB-PHYLUM				11,658
Nor Family		2,594		
Murik	1,476			
Kopar	229			
Pondo Family		9,064		
Angoram	6,514			
Karawari	1,300			
Yimas	200			
Chambri	1,050			
GAPUN SUB-PHYLUM-LEVEL FAMILY				2,525
Gapun	74			
Bungain	2,451			
RAMU SUB-PHYLUM				45,900
Yuat Super-Stock			7,700	
Mongol-Langam stock-level Family			1,406	
Mongol	338			
Langam	254			
Yaul	814			
Yuat stock-level Family			3,918	
Biwat	1,642			
Miyak	584			
Mekmek	1,036			
Changriwa	498			
Bun	194			
Piawi stock-level Family			2,400?	
Pinai	100?		see note at end of 2.15.1.	
Aramaue	300?			
Wiyaw	1000			
Wapi?	1000			
Ramu Super-Stock			38,196	
Grass Stock			11,478	
Grass Family		8,909		
Kambot	5,738			
Gorovu	50?			
Adjora	2,347			
Aion	774			
Banaro Family		2,569		
Banaro	2,569			
Arafundi stock-level Family			733	
Alfendio	633			
Meakambut	100?			

Annaberg Stock			6,612
Rao Family		5,208	
Rao	5,208		
Aian Family		1,404	
Anor	574?		
Aiome	830?		
Ruboni Stock			11,256
Ottilien Family		3,137	
Watam	367		
Kaian	278		
Gamei	1,202		
Awar	529		
Bosman	761		
Misegian Family		8,119	
Mikarew	5,872?		
Sepen	428?		
Giri	1,819?		
Goam Stock			8,117
Ataitan Family		5,112	
Tangu	2,684?		
Igom	1,202?		
Tanguat	506?		
Andarum	720?		
Tamolan Family		3,005	
Itutang	220?		
Midsivindi	691?		
Akrukay	191?		
Breri	1,072?		
Romkun	389?		
Kominimung	328?		
Igana	114?		

2.11.3. COMMENTS ON INDIVIDUAL GROUPS AND LANGUAGES

2.11.3.1. *SEPIK SUB-PHYLUM*

2.11.3.1.1. Biksi Stock-Level Isolate

The language called Biksi was recorded by Laycock in 1970, from visitors to the Green River patrol post, in the West Sepik District; their home villages are said to be located towards (or possibly south of) the headwaters of the Biake River, in Irian Jaya. (Conrad and Dye (1975) observe that 'The Biksi language area is said to extend for six days' walk west of the border'; but this seems very unlikely, in view of

current knowledge of the languages of Irian Jaya). The language shows distant connections with languages of the Middle Sepik Super-Stock in lexicon and pronouns, but its lack of close agreement with any particular language, stock or family of this group necessitates placing it apart as a stock-level isolate on a par with the super-stocks in the Sepik Sub-Phylum. A brief wordlist was published by Laycock (1972).

Data on Biksi is too scanty to make definite pronouncements on its nature, but some indication can be given. The phonology lacks a palatal series, but maintains the common Sepik-Ramu feature of an opposition between plain (voiceless) and prenasalised (voiced) stops; consonants appear to be /p t k b d g m n ŋ f v s r l w y/ - but the contrast between /f/ and /v/ (both bilabial) is not completely certain. Vowels are /a e i o u/, of which /a e o/ occur nasalised - but apparently only in nasal environments. Tense/aspect, and number of subject, are marked by suffixes to the verb: pwa tiso *you* (sg.) *come*, so tiriso *you* (pl.) *come* (stem ti-, plural marker -ri-, imperative marker - so). Subject-concordance in verbs is not established, but may occur in some tenses. The pronouns distinguish singular and plural only, and not gender, as follows:

	Sg.	Pl.
1st	nyo	nana
2nd	pwo	so
3rd	do	dwa

The third-person pronouns are apparently cognate with Abelam də and dʌy, the first-plural with Abelam nanə; other apparent cognates between Biksi and Abelam (the latter being taken as representative of Sepik sub-phylum languages) include nel/ñan *child*, wal/wan *ear*, awa/yapʌ *father*, lev/nəbw *mountain*, yaw/ya *fire*, mvale/balə *pig*, nim/ñəmw *louse*, war/kwarʌ *grass skirt*. Adjectives precede the noun they qualify. Case-markings on nouns and pronouns were not recorded, except for a possessive suffix -say.

2.11.3.1.2. Upper Sepik Super-Stock

The relationship of all languages of this group to each other is readily apparent in lexicon, though there are considerable differences in structure. Conrad and Dye (1975) add Namie to the four languages of their 'Upper Sepik Stock' (Wogamusin, Sepik Iwam, 'May River Iwam', and Abau), on the basis of 13% shared cognates with Abau and 12% shared cognates with 'May River Iwam', but Laycock's data suggests rather that Namie belongs with the Middle Sepik languages, on the basis not only of shared lexical features, but also on the basis of shared typological features.

Brief samples of the vocabulary of Iwam, Amal, Wogamusin, Abau, Karawa, Bouye, Autu, Mayo, Pasi, and Pahi were given by Laycock (1968). Further notes on representative languages of each family are given here, as they are relatively undocumented.

2.11.3.1.2.1. *Upper Sepik Stock*

IWAM

Members of the Summer Institute of Linguistics who have worked on Iwam (R. and J. Conrad, J. Rehburg, M. Laszlo) regard the language here called Iwam as two distinct languages, which they call 'May River Iwam' and 'Sepik Iwam' - terminology followed by Conrad and Dye (1975); Laycock (1973) lists the villages speaking each variety, but on the basis of material collected in each prefers to regard them as dialects of a single language. There are considerable differences between the two dialects, if the villages at the extreme ends of the language-area are taken; but the villages in the centre of the area (around the mouth of the May River) communicate easily with all Iwam-speaking villages.

The segmental phonemes are given by Laycock (1965a) as /p t k m n ŋ s h w r y a e i ə o u/, but there is some difficulty about the interpretation of a 'flap n' in initial and intervocalic position as an allophone of /ŋ/ (which occurs as [ŋ] only finally); it seems more likely that this flap [ň] represents [^{n}d] (/d/ or /nd/), and that [^{m}b] (/b/ or /mb/) and [^{ŋ}g] (/g/ or /ŋg/) should also be recognised.

As in Abau, verbs agree only with number of subject, (markings being -i m.sg., -a f.sg., -o du., -əm pl.), with tense/aspect being indicated by particles preceding the verb: ka ndayi *I eat*, ka te ndayi *I want to eat*, ka pəti ndayi *I ate*, si ndaya *she eats*, kow ndayo *you two eat*, səm ndayəm *they eat*.

The basic pronouns are:

	Sg.	Du.	Pl.
1st	ka	kərər	kərəm
2nd	ki	kow	kom
3rd m.	si	sow	səm
3rd f.	sa		

Noun and pronoun affixation is limited to object and possessive suffixes, and does not appear to be obligatory. Adjectives follow the noun they modify.

Five number-sets, occurring with different noun-classes, were recorded; Class I is used with male humans, Class II with female humans, and Classes III, IV and V admit of no easy specification:

	Class I	Class II	Class III	Class IV	Class V
one	ndwor	or	gwor	hor	hwor
two	ndwis	is	gwis	həys	hwis
three	ndwum	owum	gwum	hum	hwum
four	ndwi	oti	gwi	hwi	hwi

Numerals from 'five' on are the same for all classes. The forms and classification system should be compared with those of other SERP languages treated in this section.

WOGAMUSIN AND CHENAPIAN

As these languages are very similar in many respects, they can be treated together. Laycock (1965b) gives the phonemes of Wogamusin as /p t k b d g mb nd ŋg m n ŋ s h w r y a e i ə o u/; those of Chenapian appear to be similar, but it is necessary to add /nj/ [ñ̆j], which suggests also that /s/ [s, sv] would be better regarded as the unvoiced palatal counterpart. In both languages, verbs mark (by particles and suffixes) tense/aspect only, with no person or number agreements with either subject or object; pronouns are marked for object, and possession in predicative position, but nouns are unmarked for case. Kinship terms take irregular plural markings in Wogamusin; no data on this point is available for Chenapian. Both languages share the unusual feature of two sets of pronouns, which make a different number of person and gender distinctions; in both languages, set II is the set preferred for the indication of possession, but this does not seem to be their only function. The sets are as follows (with some of the Chenapian forms not fully established):

	WOGAMUSIN		CHENAPIAN	
	I	II	I	II
	Sg.	Sg.	Sg.	Sg.
1st	nay	se	an	suŋ
2nd m.	ni	tay	nan	taŋ
2nd f.	ni	ti	nin	teŋ
3rd m.	ye	te	tow	sira
3rd f.	yor	tar	ti	siru
	Du.	Du.	Du.	Du.
1st	nond	sond	ser	ser
2nd	noh	toh	nay	tay
3rd	yoh	toh	tey	tey

	WOGAMUSIN		CHENAPIAN	
	I Pl.	II Pl.	I Pl.	II Pl.
1st.	non	son	sam	sam
2nd	nom	tom	nam	tam
3rd	yor	tor	tam	tam

Both languages also show noun-classification, as instanced by the number-sets used; the number-sets vary for class as high as *four*, the higher numbers being the same for all classes. Only five classes were recorded for each language, but the data in Chenapian, at least, are fragmentary. As with Abau, the classes are roughly semantically determined - Class I with humans, Class II with animates, and Class III with plants. The remaining classes are not easily specifiable.

In Wogamusin, the numerals agree additionally in gender for *one*; in the setting-out below, the masculine is given first:

	WOGAMUSIN		CHENAPIAN	
	Class I	Class II	Class I	Class II
one	red/rad	red/rad	sirə	gwarə
two	sus	rus	sisi	gwisi
three	sum	rum	simu	gwumu
four	hərsis	hərrum	howsis	howis
	Class III	Class IV	Class III	Class IV
one	bid/bidin	hend/hand	birə	narə
two	bus	hus	bisi	nesi
three	bum	hum	bumu	nəmu
four	hərbus	hərhus	heybis	hares
	Class V		Class V	
one	ŋgwad/ŋgwed		kwarə	
two	ŋgwus		kwisi	
three	ŋgwum		kwumu	
four	hərŋgwus		hawkwis	

Adjectives follow the noun they qualify, but possessors precede the noun. Sentence-medial marking is rudimentary.

ABAU

The phonology given by Laycock (1965b), namely, /p k m n s h w r y a i e ɛ ə ɔ o u/, still seems substantially correct, although there is room for disagreement about the treatment of phonetic [ou ei] in final position

as single vowel phonemes /e/ and /o/. The missionary-linguists D. and M. Bailey, stationed at Green River, also claim to have established tonal contrasts in the verb morphology, which, if true, contradicts Laycock's (1965b) statement that Abau, Iwam, and Wogamusin are not tonal. An example of the vowel contrasts within a number of common verbs is instructive:

ra	*eat*	ra-e	*go to eat*	ra-ɛ	*come to eat*
ri	*cut*	ri-i	*go to cut*	ri-ɛ	*come to cut*
re	*go; walk*	re-e	*go to go*	re-ɛ	*come to go*
rɛ	*come*	rɛ-i	*go to come*	rɛ-ɛ	*come to come*
rɔ	*shoot*	rɔ-e	*go to shoot*	rɔ-ɛ	*come to shoot*
ro	*blow flutes*	ro-e	*go to blow*	ro-ɛ	*come to blow*
rɔw	*defecate*	rɔw-e	*go to defecate*	rɔw-ɛ	*come to defecate*
ru	*copulate*	ru-e	*go to copulate*	ru-ɛ	*come to copulate*

Verbs are marked for tense/aspect by both suffixes and by preceding particles, and (non-obligatorily) for dual subject, by a prefix nVn- (where V represents the stem vowel of the verb) which replaces initial /r/: hakwe ma ra *I eat again*, hakwe per ra *I eat first*, hakwe ra-pa *I don't eat*, hikwe ra-rak *don't let him eat*, hrɔrkwe nana *we two eat*, hrɔrkwe nɔnɔ *we two shoot*, hɔhkwe nɛnɛ *they two come*, hɔhkwe nɔnɔw *they two defecate*.

Pronouns do not distinguish between second and third persons in non-singular numbers; gender is distinguished in the singular:

	Sg.	Du.	Pl.
1st	ha(kwe)	hrɔr(kwe)	hrɔm(kwe)
2nd	hun(kwe)	hɔh(kwe)	hɔm(kwe)
3rd m.	hi(kwe)	hɔh(kwe)	hɔm(kwe)
3rd f.	hɔ(kwe)		

(Note that in Laycock (1965b), all the above instances of /ɔ/ are misprinted as /ə/.)

Abau nouns are all inherently masculine or feminine in the singular, and select the appropriate third person pronouns, as well as gender-determined case-marking; in the plural the gender marking does not occur:

	masculine	feminine	plural
accusative	sɛ	kɛ	mɛ
possessive	sɔ	kɔ	mɔ

In addition, a cross-cutting class system applies, all nouns belonging to one of at least twelve different classes, determined by the number-set selected. Concordance in number-sets is shown only as high as *three*, the higher numerals being the same for all classes:

ABAU NUMBER-SETS

	I	II	III	IV	V	VI
one	prin	kamɔn	namɔn	sirin	pirin	umɔn
two	pris	krɛs	narɛs	sɛs	pirɛs	urɛs
three	prumni	krumni	narumni	sirumni	pirumni	urumni

	VII	VIII	IX	X	XI	XII
one	imɔn	rimɔn	inmɔn	rukwmɔn	hnɔmun	hukwmɔn
two	irɛs	rirɛs	inrɛs	rukwris	hnɔris	hukwris
three	irumni	rirumni	inrumni	rukwrumni	hnɔrumni	hukwrumni

The rationale of the classes is not entirely clear; Class I contains nouns denoting human beings only, and Class II is made up, predominantly, of nouns referring to animates; in Class III, the definition appears to be 'round objects', but Class IV (which contains such diverse items as *shoulder*, *wind*, *fire*, *dream*, *mushroom* and *green vegetables*) admits of no easy definition. Class V contains 'pointed objects', Class VI 'geographical terms', and Class VII 'flat objects', for the most part. For the remaining classes, only a few items were recorded: for Class VIII, three words referring to sago, and one species of yam; for Class IX, three words referring to bundles; for Class X, the word for *sago broth*; for Class XI, *bundle of sugarcane*; for Class XII, words meaning *firebrand* or *torch*. Further rare classes may still exist in the language.

Similar noun-classification, determined by number-sets (and occasionally also by concordance with common adjectives) is found in other members of the Upper Sepik Stock - namely, Iwam, Wogamusin, and Chenapian; it was not recorded for Amal, but data on that language is fragmentary. All show the cross-cutting gender system, which is itself common in languages of the Sepik-Ramu Phylum (especially the Sepik Sub-Phylum); languages of the Lower Sepik Sub-Phylum show a similar class-system without the cross-cutting gender system. These systems should be compared (and contrasted) with those of the languages of the Torricelli Phylum (2.12.0).

2.11.3.1.2.2. *Tama Stock*

MEHEK AND MAYO

The phonemes of Mehek appear to be /t k b d g m n f r s h l w y a e i o u/; these are the same as are given for Mayo (Mayo-Yessan)[1] in a grammar by Foreman (1974), except that for Mayo /kw/ and /gw/ are recognised (perhaps unnecessarily), and the /f/ of Mehek is written as /p/. (In both languages, [p] and [Φ] are allophones, but the stop allophone is

[1] Both names are unsatisfactory. A better name might be Yasi, which is what the Kwoma call the speakers of this language.

very rare in Mehek). In Mehek, the sequences [mbr] [ndr] are taken to be /mr/ /nr/ rather than /br/ /dr/, for morphological reasons. The voiced stops are prenasalised in both languages.

The basic pronouns in Mehek and Mayo are as follows:

	MEHEK			MAYO		
	Sg.	Du.	Pl.	Sg.	Du.	Pl.
1st	onta	nonra	nomra	an	nis	nim
2nd	nura	funra	kumra	ni	kep	kem
3rd m.	rura/gira	fura/ofra/gifra	mura/omra	ri	rip	rim
3rd f.	sura			si		

The Mehek pronouns were not recorded in shorter forms, but the -ta/-ra suffix found in all of them is probably emphatic. The distinction between the alternative 3rd person forms is not quite clear.

Both languages are predominantly suffixing, but a few prefixes occur; in Mayo, only tense/aspect are marked in the verb, but Mehek has a full system of suffixes for concordance with subject, as the following conjugation of the verb a- *eat* in past and present tenses shows:

	PRESENT	PAST
Sg. 1st	onta a-Ø-n	onta a-m-yin
2nd	nura a-ya-n	nura a-m-n
3rd m.	rura a-ya-r	rura a-m-r
3rd f.	sura a-ya-s	sura a-m-s
Du. 1st	nonra a-ya-dun	nonra a-m-dun
2nd	funra a-ya-fun	funra a-m-fun
3rd	fura a-ya-f	fura a-m-f
Pl. 1st	nomra a-ya-num	nomra a-m-num
2nd	kumra a-ya-kum	kumra a-m-kum
3rd	mura a-ya-m	mura a-m-m

(The last form is pronounced with a clear long /m/).

Nouns and pronouns are suffixed for location, object, possession and accompaniment, as well as for emphasis and focus. Gender occurs in nouns in both languages, in the selection of masculine or feminine pronouns in the singular, but number-sets do not vary for gender or class. Mehek in addition has the optional facility of adding the 3rd person markers to nouns, to indicate number and gender: tamar *(one) man*, tamaf *(two) men*, tamam *(many) men*, tawas *(one) woman*, tawaf *(two) women*, tawam *(many) women*. The same marking is found with adjectives, with an additional suffix -t indicating the singular of some inanimates: tawa nubuls *small woman*, tawa nubulf *(two) small women*, tawa nubulm *(many) small women*,

tama mubulr *small man*, aka nubult *small house*.

Adjectives, as can be seen from the examples above, follow the noun they qualify. Sentence-medial marking is found in verbs, with a distinction between same subject and different subject in the two clauses; but the pattern is less complex than that prevailing in languages of the Trans-New Guinea Phylum.

2.11.3.1.3. Middle Sepik Super-Stock

Languages of the Middle Sepik Super-Stock form a fairly closely-related group within the Sepik-Ramu Phylum. As a group they have had more attention than other languages of the Sepik region, and can be regarded as exemplifying most of the features typical of 'Sepik' languages.

2.11.3.1.3.1. *Yellow River Family*

The Yellow River stock-level Family has been so far recorded only in fieldnotes; the languages share many cognates with languages of the Upper Sepik Stock, but more with Middle Sepik Stock languages, as well as resembling these last in the forms of the pronouns, in phonology, and in the form of the two-gender system in nouns and pronouns.

NAMIE

A brief wordlist in Namie was published by Laycock (1968), but this, obtained from an Administration interpreter for whom Namie was a second language, contains many inaccuracies; better material was obtained on later fieldwork. According to Mead (1973), Namie-speakers have been called 'Lujere' (from lu *man*) by W. Mitchell, an anthropologist working in the area.

The phonemes appear to be /p t [t, r] c [tʸ] k b [b, β] g [g, ɣ] m n l [d, l, r] æ [a, e] a [a·, ɑ·] e i o u ə/; the phonemic overlap between /t/ and /l/ (both realised intervocalically as /r/) causes some difficulty in interpretation. (The /l/ corresponds to /d/ [ⁿd] in Ndu family languages; a prenasalised series appears to be lacking, though /mb/ and /ŋg/ occur as sequences; [nd] is taken to be /nl/). The two low-front vowels /æ/ and /a/ (with many allophonic variations) are characteristic of many Middle Sepik Stock languages; it is the first of these that has given rise to most of the occurrences of /e/ and /o/ in those languages (such as Namie) of the Sepik-Ramu phylum in which it is necessary to extend the postulated original three-vowel system to a five-vowel system.

Morphology is less complex than in languages of the Ndu Family; nouns are marked only for object (-m) and possession (-g), and verbs are marked

for tense/aspect only, by the use of both prefixes and suffixes: an tæle *I go (now)*, an lemiya *I go (tomorrow)* (stem le *go*). The pronouns are as follows (with some doubt about 3rd person forms):

	Sg.	Du.	Pl.
1st	an	eyra	em
2nd	ney	wupli	wum
3rd m.	lə	ləb	ləm
3rd f.	eo		

Adjectives follow the noun they qualify.

2.11.3.1.3.2. *Nukuma Family*

KWOMA AND KWANGA

S.I.L. teams are working in Kwoma (called by them 'Washkuk') and a statement of the phonemics has been published (Kooyers *et al.* 1971), the phonemes being /p t č k ʔ b d j g v s š h m n ñ w r y i e ə ɨ a u o/. The voiced stops are prenasalised. There is room for disagreement on the vowel phonemes proposed, and on the orthography used to represent them (especially ee for /e/ and ii for /ɨ/), but the subject is too complicated to discuss here. As typical of the family we may rather take Kwanga (data from fieldnotes of Laycock).

Considerable dialect diversity prevails in the Kwanga-speaking area; the dialects are identified in Laycock (1973). Fieldnotes were obtained from the extreme west of the area (Seim), and from informants in the centre, in Bongos and Tau.

The phonemes of all dialects appear to be /p [p, β] t [t, ř] č k f s š h m n ñ ŋ w r l y a e i o u ə/. In the morphology and lexicon, some dialect differences emerge, especially in the non-singular pronouns; but in all there seems to be no distinction between 1st dual and 2nd dual. The pronouns of Bongos/Tau are as follows:

	Sg.	Du.	Pl.
1st	an	sir/sumu	nir/numu
2nd	mir	sir/sumu	kwir/kumu
3rd m.	or	opmu/fri	lir
3rd f.	ñir		

The Seim dialect has mim '2nd sg.', nim '1st pl.', and či '2nd pl.'. In addition, this dialect uses abbreviated pronoun forms as subject-markers on verbs, in the same way as neighbouring languages of the Torricelli Phylum (from which či looks like a borrowing); this feature is not apparent in notes from the dialects of Bongos and Tau, but may nevertheless be present. Otherwise, verb morphology consists only of tense/aspect

markers, predominantly (but not exclusively) suffixes. Pronouns are suffixed to indicate possession and object, but no noun morphology was recorded.

2.11.3.1.3.3. *Ndu Family*

The best-known languages of this stock are some of the members of the Ndu Family, documented by Laycock (1965a) and in S.I.L. publications (Glasgow and Loving (1964) - survey; Staalsen (1966, 1969, 1972) - Iatmul; Allen and Hurd (1972) - Manambu; Pike (1964) - Abelam). All members of the Ndu Family show the relatively rare feature of distinguishing second-person-feminine in pronouns; a first-person feminine is also distinguished in Manambu and Ngala (though without a separate pronoun in the first instance). The Abelam and Boiken languages are the two largest languages of the Sepik region, and could well be important in any vernacular language program. S.I.L. teams are working in Abelam, Boiken, Iatmul, Manambu, and Sawos (called by them 'Gaikunti' or 'Sepik Plains'). Some notes are provided below on Abelam and Iatmul.

Note also that the language called Buiamanambu in Laycock (1973) is reported to be the same language as Yelogu by Ross Bowden, an anthropologist who worked among the Kwoma (personal communication). According to this report, the language is known as Wanyima or Kaunga, and is spoken in Yelogu, Buiamanambu (the amalgamation of Bariamp and Gamanjui villages), and also by some of the inhabitants of Ambukan (the remainder being Kwoma-speaking). This name Kaunga is adopted in this section, and the population figures adjusted.

ABELAM

A fairly comprehensive grammar of Abelam is provided by Laycock (1965), from which the following summary is taken. The phonemes are given as /p t c k b d j g m n ñ ŋ v r l w y ə ʌ a/; there seems at present no reason to deviate from this scheme, which is fairly representative of Ndu Family languages, but the orthographic representation could be improved; I suggest a for /ʌ/, aa for /a/, and ɨ for /ə/; u and i could also be written in the positions preceding and following /w/ and /y/, respectively, where the phonemic analysis requires zero. The phoneme /c/ would better be written s. Note also that the voiced stops /b d j g/ are prenasalised, and that pressure from Pidgin and English may require that they be written with the nasal element - either mb nd ñj ŋg or mp nt ñs ŋk.

Abelam distinguishes three persons and three numbers in pronouns, and gender in singular non-first person pronouns - the presence of the 2nd

singular feminine pronoun is diagnostic of the Ndu Family. Verbs show an elaborate morphology of tense/aspect, with concordance with subject-pronouns being expressed by a number of different bound allomorphs of the pronouns. The language is predominantly suffixing, although some prefixes occur. Nouns and pronouns take suffixes for various case-relations, principally object, dative, possessive, and locative, and comitative.

The free pronouns are as follows:

	Sg.	Du.	Pl.
1st	wn	anə	nanə
2nd m.	mən	bən	gwnə
2nd f.	ñən		
3rd m.	də	bərə	dʌy
3rd f.	lə		

The pronoun allomorphs in the verbal complex can be seen in the following examples: anə kya-kʌ-tə-kwʌ *we two shall die* (kya- *die*, -kʌ- future, -tə- *we two*, -kwʌ non-past); wnə kʌ-wtə-n *I ate* (kʌ- *eat*, -wtə- *I*, -n past); wa-vya-mənə-k *did you kill it?* (wa- distant action, vya- *kill*, -mənə- *you* (sg.), -k past question).

Sentence-medial verbs occur in two forms, a simple participial form without subject concordance when the subjects of the two clauses are the same, and a set of more complex affixed forms when the subjects of the two clauses are different. Most adjectives follow the noun they qualify, but demonstratives and possessives precede.

IATMUL

The principal data on Iatmul to date is that of Staalsen - a paper on the phonemes (1966) one on the dialects (1969), and one on clause relationships (1972). A phonemic statement and notes on the morphology are provided also by Laycock (1965a), but the phonemic interpretation differs from that of Staalsen; the differences are worth a brief comment. Laycock gives the phonemes /p t c k b d j g m n ñ ŋ v r l w y a ə ʌ/, whereas Staalsen has /p t s k m n ñ ɓ l w y a ɨ ə/. Some of the differences are merely orthographic, so that /c/ and /s/, and /v/ and /ɓ/, are completely equivalent. Other differences arise from the interpretation of sequences - the prenasalised series of Laycock (/b d j g/) are written by Staalsen as /mp nd nts nk/. Staalsen also adds a sequence /ts/, which is subsumed under Laycock's /c/. The vowel situation is a little more complex; Staalsen's /aa/ is Laycock's /a/, and his /a/ is Laycock's /ʌ/ - except where it precedes or follows /w/ or /y/, when it is interpreted as /ə/. The other occurrences of Staalsen's /ɨ/ and /ə/ correspond to Laycock's

/ə/. Both solutions are compatible with the data; Laycock's solution was perhaps strongly influenced by the analysis of the closely-related Abelam language.

A few other major discrepancies occur. Staalsen recognises a phoneme /g/, which Laycock treated as an allophone of /k/ intervocalically; as minimal pairs are provided, this must be accepted. Laycock on the other hand recognises phonemes /r/ and /ŋ/, which are analysed by Staalsen (probably again correctly) as allophones of /l/ and /n/ respectively; Staalsen does not however mention the fact that /t/ also has an allophone [ř] in certain environments.

Laycock states that final stops /p t c k/ are unreleased in final position, and in free variation with each other; Staalsen claims that some contrasts are maintained (by some speakers) in final position, and that the stops have in fact 'a voiceless nasal release which is often hard to detect'. The statements on release are not incompatible; any unreleased stop must be released sometime, and, in the case of Iatmul, the release is (voiceless) nasal. However, the nasal release is not as striking as in the case of Boiken, where all final stops are released with a clear, and usually voiced, homorganic nasal.

The differences in these two descriptions of Iatmul point up once again the possibilities of multiple phonemic analyses in languages of the New Guinea area, with perfectly acceptable solutions, in terms of functionality, being arrived at from different interpretations.

2.11.3.1.3.4. *Sepik Hill Family*

Another important group within the Middle Sepik Super-Stock is the Sepik Hill stock-level Family, principally documented by Dye and Townsends (1969). A large number of languages are included in the family, which seems suspiciously large, and it may well be the case that further data will justify the suspicion that the stock-level Family can be divided into several families. S.I.L. teams are working in Alamblak, Bahinemo, Sanio ('Sanio-Hiowe'), and Hewa ('Yoliapi'), but very few publications on this important group have yet appeared (R. Lewis (1972), S. Lewis (1972) - Sanio; Cochran (1968) - Hewa). It is apparent that the southernmost Sepik Hill languages (especially Hewa) have been heavily influenced by languages of the East New Guinea Highlands Stock and other Trans-New Guinea Phylum languages. Documentation of this feature would provide valuable information on language-contact within Papua New Guinea.

2.11.3.2. *LEONHARD SCHULTZE SUB-PHYLUM-LEVEL FAMILY*

The languages Walio, Pai, Yabio and Tuwari were mentioned as forming a related group, at about family level, by Dye and Townsends (1969);

Laycock (1973) added Papi, a language spoken on the Frieda River, on the basis of shared typological features in the classification system (see below), although the lexical cognacy is not great. Conrad and Dye (1975) put the shared cognates of Papi ('Paupe') with Yabio as low as 7% and at less than 3% with any other language; however, they mention that Papi is 29% cognate with a language Duranmin, 'spoken in a few hamlets on the Kenru River, a tributary of the Om River, 35 miles to the south'. It is not quite clear whether this Duranmin is a different language to the Tuwari mentioned by Dye and Townsends (1969), but it is taken as such here, and Duranmin is added to the Leonhard Schultze Sub-Phylum.

The April River languages on which Laycock has data (Walio and Pai), as well as Papi, show an unusual type of noun-classification, best explained in examples from Pai: hosapo *house*; ho fawi-sapo *big house*, ho itowi-sapo *good house*; wagɛ *canoe*, wagɛ fawi-hugu *big canoe*, wagɛ itowi-hugu *good canoe*; apɛ *cassowary*, apɛ fawi-tu *big cassowary*, ɓi *tree*, ɓi gawi-fɛ *big tree*; sta *coconut*, sta fawi-fo *big coconut*. The suffixed element may be a fossilised noun, but the whole system is still obscure.

The languages of the Leonhard Schultze Phylum so far examined do show a number of good lexical cognates with other Sepik-Ramu Phylum languages, some very clear (Pai apɛ *cassowary*, Iwam hap *cassowary*, Abelam apwi *bird*), others involving the postulating of complex sound-changes; but the aberrancies of the grammar suggest that an alien substratum is present, overlaid by typical Sepik lexicon. The presence of noun-classification may link the Leonhard Schultze Sub-Phylum languages more closely with the Lower Sepik Sub-Phylum languages, although the system appears different.

2.11.3.3. *LOWER SEPIK SUB-PHYLUM*

A grouping of 'Nor-Pondo' languages (named after the words for *man* in the two constituent families) was first suggested by Laumann (1951), and confirmed and extended by Haberland (1966). The relationship of the six languages within the phylum is at no more than stock level, but the inclusion of these six languages within the Sepik-Ramu Phylum at all contains, as with the languages of the Leonhard Schultze Sub-Phylum, an element of doubt. Within the Pondo Family, especially, there occurs noun-classification with an extensive concordance system in noun-adjuncts and verbs; such a system is also reported for Murik (Nor Family) by Schmidt (1953), but this was not confirmed for either Murik or Kopar by Laycock in 1970-71, perhaps owing to the paucity of data collected, or because the classification-system is in the process of decay. Lexically, the Lower Sepik Sub-Phylum languages show their greatest number of potential cognates with languages of the Ramu Sub-Phylum, but the

relationship, if it exists, is not sufficiently great to allow these languages to be placed within the Ramu Sub-Phylum; accordingly, a separate sub-phylum, with probably at least distant connections with Sepik-Ramu Phylum languages, but with perhaps a number of substratum features, is postulated.

2.11.3.3.1. Pondo Family

CHAMBRI

The greatest complexity in Lower Sepik Sub-Phylum languages is found in Chambri, which is therefore a language which should be studied in depth.

To date the only published material on Chambri is a brief wordlist in Fortune (1942), where the suggestion is made that the language might be related to Arapesh (Torricelli Phylum). The only grounds for this belief are that both are multiple-classifying languages, but the resemblances in the classification system are not in fact very close, and it is clear that Chambri belongs rather with languages of the Sepik-Ramu Phylum than languages of the Torricelli Phylum. The following brief account of Chambri is based on fieldnotes made by Laycock in a few hours with a Chambri informant in 1971; there are however many unsolved problems.

The phonemes appear to consist of /p t k b j d g m n ŋ r s w y i e a ə o u/; /s/ is probably to be interpreted as filling the position of palatal stop. Among the vowels, /e/ is usually [ɛ], but [e] before /y/, and, similarly, /o/ is usually [ɔ], but [o] before /w/ - both probably derive from a short [a] historically, and there is some synchronic evidence for this view. Sequences of nasal plus stop (voiced and voiceless) are frequent, and not always homorganic (nəmtabar *villages*; pərampankari *knee*).

It is in morphology, however, that Chambri shows its greatest complexity. All nouns are assignable to classes, determined principally by the number-sets used with them (as in languages of the Upper Sepik Sub-Phylum), but also probably by class-agreements for class of object in transitive verbs (not recorded for Chambri, but evidenced for the closely-related Angoram language). In addition, nouns show morphological marking for dual and plural, often in fairly unpredictable forms (though the non-singular markings do correlate to some extent with class membership). Owing to the shortness of the informant session, very few dual forms were recorded; an example is sesen *eye*, sesenkəkəri *eyes* (dual), sesenkər *eyes* (plural). Some examples of the variation in plural marking follow:

	Singular	Plural
man	noranen	noram
child	kow	kawas
ear	kukunamp	kukunampas
head	kari	karar
finger	nonamp	nonabar
belly	sarei	sarapar
rain	manu	manukas
path	aw	awntabar
tree	yuwan	yuwari
dog	yuri	yuranar
pig	nəmpran	nəmpranti
rat	ora	orantar
house	kurər	kurabar
canoe	key	ker
paddle	naŋk	naŋkər

Some examples of the number-sets can also be given:

	Class I	Class II	Class III
one	bwiyan	bwiyaŋk	bwiyamp
two	nəmp	kəli	pari
three	nəmpramkey	kiyaram	poran
four	yiramənəŋkey	yiram	yiram
five	sesənəŋkey	ses	ses

	Class IV	Class V
one	bwiyan	bwiyakei
two	wusim	yiri
three	samneynab	yamtamnamuŋk
four	yiramneynab	yiramnamuŋk
five	sesneynab	sesenamuŋk

Class I was recorded with nouns *man* and *dog*, Class II with *eye*, Class III with *ear*, Class IV with *tree*, and Class V with *canoe*. Basic class concordance involves the first four numerals only, but higher numerals often take additional suffixes (as in Classes I, IV and V) which are at present obscure.

Pronouns distinguish three numbers, singular, dual, and plural, but not gender or - apparently - class. The basic free pronouns are:

	Sg.	Du.	Pl.
1st	ami	kəpi	yipi
2nd	nəmi	kəbwi	yibwi
3rd	mən	menemp	mum

Verbs show concordance with person/number of subject; object marking does not appear to be present in verbs (though it is found in Angoram, marking also the class of third-person objects), and objects are expressed by objective forms of the free pronouns. Verbs show concordance by both prefixes and suffixes, with the forms differing for different tenses; a selection from the verb paradigm of am- *eat* will show the complexities of the system:

PRESENT

	Sg.	Du.	Pl.
1st	am-am-kən	pimp-am-kən	par-am-kən
2nd	nəm-am-kən	kəbw-am-kən	yibw-am-kən
3rd	an-am-kən	emp-am-kən	er-am-kən

PRESENT NEGATIVE

	Sg.	Du.	Pl.
1st	papa amp-am-ən	papa kəp-am-ən	papa yip-am-ən
2nd	papa nəm-am-ən	papa kəbw-am-ən	papa yibw-am-ən
3rd	papa yin-am-ən	papa yimp-am-ən	papa yir-am-ən

PAST

	Sg.	Du.	Pl.
1st	am-am-i	pimp-am-i	par-am-i
2nd	nəm-am-i	bwimp-am-i	bwar-am-i
3rd	an-am-i	emp-am-i	er-am-i

PAST NEGATIVE

	Sg.	Du.	Pl.
1st	papa amp-am-i	papa kəp-am-i	papa yip-am-i
2nd	papa nəm-am-i	papa kəbw-am-i	papa yibw-am-i
3rd	papa yin-am-i	papa yimp-am-i	papa yir-am-i

FUTURE

	Sg.	Du.	Pl.
1st	am-ŋk-am-ən	am-ŋk-pemp-ən	am-ŋk-par-ən
2nd	am-ŋk-nəm-ən	am-ŋk-bwemp-ən	am-ŋk-bwar-ən
3rd	am-ŋk-an-ən	am-ŋk-emp-ən	am-ŋk-er-ən

FUTURE NEGATIVE

	Sg.	Du.	Pl.
1st	papa ampə am-ŋkə	papa kəpə am-ŋkə	papa yipə am-ŋkə
2nd	papa nəmə am-ŋkə	papa kəbwə am-ŋkə	papa yibuŋ am-ŋkə
3rd	papa yinə am-ŋkə	papa yimpə am-ŋkə	papa yirəŋ am-ŋkə

The recorded data yield little information on Chambri syntax. The word-order of free constituents is SOV, and adjectives follow the nouns they qualify.

2.11.3.4. *GAPUN SUB-PHYLUM-LEVEL FAMILY*

Only two languages make up this sub-phylum, Gapun and Bungain; their relationship with each other is clear, but not close (almost stock-level); further, they show typological relationship (in the complexity of verbal morphology) with Lower Sepik Sub-Phylum languages, and much of the typical lexicon of Lower Sepik and Ramu Sub-Phylum languages (with also considerable borrowing from nearby, but unrelated, Torricelli Phylum languages). For the present, therefore, they are regarded as forming a separate sub-phylum within the Sepik-Ramu Phylum, but it is possible that further research could show them to be an isolated group that has undergone extensive influence from neighbouring languages in the Sepik area. The only data available, apart from Laycock's fieldnotes, are a short wordlist of Gapun published by Höltker (1938); for further details, especially on the name-confusion surrounding the now predominantly Bungain-speaking village of Terebu, see Laycock (1973).

2.11.3.5. *RAMU SUB-PHYLUM*

The core of the Ramu Sub-Phylum was first established by Z'graggen (1971), and comprises languages now included in the Ramu Super-Stock (on which further detail is provided by Z'graggen (1975)). Z'graggen also observed a distant relationship with some languages of the Sepik Sub-Phylum (especially the comparatively well-documented languages of the Ndu Family), and this was confirmed by Laycock. In addition, Laycock discovered a number of languages in the Sepik area which show distinct connections with the Ramu Super-Stock languages, but which cannot be said to form part of it; for this reason, the Ramu Sub-Phylum was postulated (Laycock 1973). More recent data has suggested that a Yuat Super-Stock must be recognised, containing languages which in many ways form a 'bridge' between the 'Sepik' languages and the 'Ramu' languages.

2.11.3.5.1. Yuat Super-Stock

The Yuat Super-Stock includes not only the languages given by Laycock (1973) as belonging to the Mongol-Langam Stock and the Yuat Stock, but also three languages of the Piawi stock-level Family, formerly treated as isolates; see 2.15.1.2.7.-9. These are the languages Pinai, Aramaue, and Wiyaw, which appear to form a single family, with relationships with the Yuat languages. As the relationship to any one Yuat language is not particularly close, however, it seems that this family (which, for want of a better name, may be called the 'Piawi' family, from the initial syllables of the three constituent languages) may also constitute a separate stock, with affiliations to the other two Yuat stocks (Mongol-Langam and Yuat), in a Yuat Super-Stock. Such a classification is, of course, extremely tentative, in view of the paucity of data; but the scheme may not be too far from the truth, and can in any case stand until further data is available.

2.11.3.5.2. Ramu Super-Stock

The other super-stock within the Ramu Sub-Phylum is the Ramu Super-Stock, consisting of five stocks, of which three formed the original 'Ramu Phylum' (Z'graggen 1971), and of which the other two (Grass Stock and Arafundi Stock) were added by Laycock (1973). (Z'graggen suggests that the Grass Stock would be better named 'Keram Stock', and the Grass Family named 'Porapora Family', to avoid the use of non-indigenous words in language-naming; this would be a possibility, but the area inhabited by speakers of these languages is commonly known as the 'Grass country', and a major census division of the area is called 'Grass'; accordingly, we retain here the terminology of Laycock (1973)). The languages of the super-stock show clear interrelationship on all levels; morphologically, they tend to be simpler than the remaining languages of the Sepik-Ramu Phylum (person-marking in verbs, whether of subject or object, is frequently absent, or rudimentary; noun-classification and two-gender concordance is rare; the dual number is usually absent, though morphologically-signalled plurals in nouns occur fairly frequently), but the 'Sepik-Ramu phonology' (discussed in 2.11.1.) is strongly in evidence, and lexicon shows high cognacy. (Banaro, however, is somewhat aberrant lexically). A brief account of Kambot will demonstrate these features.

Kambot, like many of the Ramu Sub-Phylum languages, shows a considerable reduction in the morphology found in languages of the Sepik Sub-Phylum - with however no great gain in simplicity of grammatical description, as the difficulties are shifted rather to the syntax.

The phonology of Kambot is describable in terms of the phoneme list

/p t s k b d j g v r m n ñ ŋ w y a e i o u ə/, where /s/ (phonetically [s], [ts]) is regarded as being the missing palatal stop corresponding to /j/, and /b d j g/ are prenasalised. (Plain stops [b] and [d] occur in the data in initial position, but are probably allomorphs of the prenasalised stops). The phonemes /p/ and /t/ are often realised as [Φ] and [r]/[l], respectively, but elsewhere /v/ and /r/ are in contrast with /p/ and /l/; this neutralisation of contrast between fricative and stop phonemes in certain (usually intervocalic) positions is found in other SERP languages as well. (See discussion on Iatmul, above.)

The basic pronouns are the following:

	Sg.	Pl.
1st	ñi	ne
2nd	wun	nun
3rd	ma/ga	le

Dual pronouns were recorded for first person, in both inclusive and exclusive forms (wuñi *you and I*, nəve *we two* (excl.)) but the former looks like a simple compound, and the status of the second is doubtful. (Some other Ramu languages, however, have a full set of dual pronouns). The difference between the two third person singular pronouns is not clear; it is not a gender difference.

The pronouns, however, rarely occur in their simple form. They take a range of suffixes as both subject and object (e.g. ñiba, ñiga) as well as in possessive constructions (e.g. ñin, ñij) and in predicative forms (e.g. ñinma, ñisəri); the exact function of all these forms is not clear. The forms may vary in a single sentence: ñiba mina səmatə, ñiga popma *I do not eat now, I wait.* Nouns also show similar suffixes, including a prevalent -dama which occurs on all monosyllabic nouns in isolated, final and predicative positions, but which may be omitted elsewhere. The suffix -gama/-guma is also common, and there may be a difference in deixis; ludama was glossed by one informant as *the dog close by*, and luguma as *the dog far away*.

Verbs show no concordance with subject or object, but take a variety of affixes for tense/aspect; the stem səma *eat* yields forms like səmame (intentive?), səmap (completive), səməlme (continuative), səmavep (future), səmapkal (completive negative), səmatal, səmatapma (both negative), and səmapəpma, səmapole, səmatə.

Word order, as throughout the Sepik-Ramu Phylum, is strictly SOV; possessive pronouns precede possessed nouns, but all other adjectives follow. Relationships between nouns are expressed by postpositions, as in all languages of the Sepik-Ramu Phylum -- and most, if not all, of the NAN languages of the New Guinea area. Sentence-medial marking as such does not occur; any verb in a sentence takes its own full tense/aspect marking.

It is worth remarking that the Kalam language, of the Simbai valley, also shows the typical phonological traits of Sepik-Ramu Phylum languages (Pawley 1966), although in all other respects one is forced to classify it with Trans-New Guinea Phylum languages (Section 2.7.2.2.5.6.); there is a possibility that there is a substratum of a Ramu Phylum language in Kalam, a possibility which is supported by the similarity of the language-name Kalam and the name of the Keram River, which flows through much of the country populated by speakers of languages of the Ramu Super-Stock. This hypothesis, and many others connected with the Sepik-Ramu Phylum, will need to be tested at a later date.

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P A R T 2.12.

THE TORRICELLI PHYLUM

2.12.0. THE TORRICELLI PHYLUM

D.C. Laycock

2.12.1. GENERAL REMARKS

The group of languages now known as the Torricelli Phylum was first described by Laycock in 1968; in the first part of that article, the name used was the 'Wapei-Palei Phylum', but this name was abandoned as early as the appendix to that article, as it became clear that the linguistic group extended far beyond the Wapei-Palei area of the West Sepik District (the section of the Torricelli ranges lying approximately between Lumi and Nuku). The group extends in fact out of the Torricelli Ranges, but the main concentration of the member languages is in the Torricelli mountain area.

Some 47 languages make up the phylum, divided into seven stocks and thirteen families. The very existence of such a large group of closely-interrelated languages seemed unsuspected until Laycock's fieldwork in 1967, although Schmidt (in Klaffl and Vormann 1905) had observed the by no means obvious relationship of Valman to Monumbo. (Neuhauss (1911:129) quotes Fr. F. Kirschbaum as saying that 'the Papuans living on both sides of the [Torricelli] range speak the same dialect', but this may be a misunderstanding; Kirschbaum was almost certainly referring to the relationship of Boiken, Abelam, and Iatmul, as adumbrated in his article of 1922.) Loukotka (1957) and Capell (1954, 1962) show no knowledge of the existence of the Torricelli Phylum, although the last-named work does provide a (highly inaccurate) map of many of the languages involved; this map, reprinted in Laycock (1965), was based on administrative information obtained by Laycock on fieldwork in 1959-60. Some of the relationships were set out by Glasgow and Loving (1964), for those languages falling within the Maprik subdistrict. The first accurate listing and mapping of the

Laycock, D.C. "The Torricelli Phylum". In Wurm, S.A. editor, *New Guinea area languages and language study, Vol. 1, Papuan languages and the New Guinea linguistic scene.* **C-38:767-782**. Pacific Linguistics, The Australian National University, 1975. DOI:*10.15144/PL-C38.767*

phylum was that by Laycock (1973); see also the map of languages of the Sepik region in chapter 2.11.1. in this volume.

The Torricelli Phylum appears to constitute a genetic group in itself; that is, no other languages in the New Guinea area appear to be even distantly related to it. Internally, however, the relationships are fairly close; the amount of lexical sharing may drop as low as 4-5%, from one end of the phylum to the other, and other distant languages may share less than 20% basic vocabulary with each other; but the commoner pattern is the occurrence of extensive chains of languages, with the percentages lying between 30% and 60%. (Only in five instances is the lexical sharing greater than 60%; the languages are Seta-Seti (68%), Olo-Elkei (63%), Yau-Yis (71%), Yil-Ningil (64%), Monumbo-Lilau (64%).)

Typologically, too, the languages stand in close relationship. They are characterised by a two-, three- or multi-class (gender) system, with concordance minimally of numerals and personal pronouns, and maximally of all noun-adjuncts; by the infrequent occurrence of morphological tense-indication in verbs, except where recognisable time particles have become fused with the verb; and by irregular morphological plurals, sometimes class-determined, of some or all nouns capable of being pluralised. Pronouns usually occur in singular, dual, and plural, and with masculine and feminine (less frequently neuter) forms in the third person; but the dual number is often missing in the second and third persons, and the gender distinction is often lacking in the dual and plural. Subject-concordance is indicated by a set of prefixes to verbs, which are remarkably consistent throughout the whole phylum. The most typical forms for these prefixes are set out in Table I

TABLE I: CHARACTERISTIC SUBJECT-MARKERS IN TP LANGUAGES

1sg.	2sg.	2msg.	3fsg.	1du.	1pl.	2pl.	3pl.
k, Ø	k, t, Ø	n, r, l	w	p, w	m, p	y	m, l, p

The w- forms for 3fsg. - and, to a lesser extent, for 1du. - are almost diagnostic of the phylum, in that any language in the Sepik region showing this feature is almost certain to be a member of the phylum.

The subject-prefixes also occur with non-verbs: Au xənmak *why I?*, kənmak *why he?*, wənmak *why she?*; perhaps further grammatical analysis will show that such forms have to be treated as verbs in Torricelli Phylum languages.

Phonologically, the languages are characterised by the following statements: three positions of articulation; usually no voicing contrast in consonant phonemes; five to eight vowels, depending on the (usually difficult) interpretation of central vocoids and certain vocoid sequences; fairly high proportion of fricative consonants (including [š], otherwise rare in the New Guinea area).

The principal features of Torricelli Phylum languages can be given in more detail with some examples from Olo, with a few notes on Southern Arapesh.

The phonemes of Olo (following A. and D. McGregor (1961a), and confirmed in the field by Laycock) are /p t k f s m n ŋ l r w y i ɪ ɛ a ɔ u ʊ/; in the orthography proposed by missionary-linguists A. and D. McGregor, /ɪ/ (phonetically also [ɨ], [ə]) is written /ë/, /ɔ/ is written /o/, /ɛ/ is written /e/, and /ʊ/ (phonetically also [o]) is written /ö/. Sequences of [Vi̯] and [Vu̯] are taken as being /VV/, in contrast to the assumptions made for languages of the Sepik-Ramu Phylum (2.11.0.), because of the existence of such minimal and near-minimal pairs as [maii̯ɛnɛ] /maiyene/ *(male name)*/[ma·i̯ɛnɛ] /mayene/ *(male name)* and [mauu̯i] /mauwi/ *(village name)*/[ma·u̯ɨ] /mawë/ *(male name)*; the alternative would be to assume either vowel length or consonant gemination (and write */mayene/-*/maayene/ or */mayyene/-*/mayene/ for the first pair given), but these assumptions are not supported by other data from the language. (Note also [tau̯te] /taute/ *(village name)* and [tauu̯ɪtɛ] /tauwëte/ *(village name)*.)

All phonemes but /ŋ/ occur initially; finally, only vowels and /f s m n l r/ occur. Syllable-initial consonant-clusters have only /p t k f/ as first member, and /l r w/ as second member; a number of other clusters occur across syllable-boundaries.

The pronouns - following here A. and D. McGregor (1961b), as for all the grammatical statements in this section (confirmed by field-notes of Laycock) - are given in the table below, together with the present-tense forms of the verb aule *come*, to illustrate the corresponding subject-prefixes:

	Sg.		Du.		Pl.	
1	ki	k-aule	ku	w-aule	ku	m-aule
2m.	ye	Ø-aule	ife rouŋke	y-aule	ife	y-aule
2f.			ife roum	y-aule		
3m.	le	l-aule	te	t-aule	pe	p-aule
3f.	ne	n-aule	me	m-aule		

The use of the subject-prefixes means that verbs in sequence all alliterate - a characteristic of Torricelli Phylum languages: le leilo

lörö̈u leli letei lato *he gets up, runs away, goes, sleeps, and remains.*

The same free pronouns (with some morphophonemic changes) are suffixed to verbs when occurring as objects; the verb may take a transitive/benefactive/directional suffix -f: ki kaule-f-epe *I come to them.* Tense/aspect is marked by particles following the verb. Possession is indicated by the free pronouns following the noun possessed, with an additional gender/number marker which precedes the possessive pronoun in non-plural numbers and follows it in the plural:

tef lei-ki	*my (large) land*
tef nei-ki	*my (small) land*
tef tei-ki	*my two (large) lands*
tef mei-ki	*my two (small) lands*
tef pei-ki	*my lands*
tef lou-ku	*our two's (large) land*
tef kou-ku	*our two's (small) land*
tef tou-ku	*our two's two (large) lands*
tef mou-ku	*our two's two (small) lands*
tef pou-ku	*our two's lands*
tef ku-lefe	*our (large) land*
tef ku-nefe	*our (small) land*
tef ku-tefe	*our two (small) lands*
tef ku-mefe	*our two (large) lands*
tef ku-pefe	*our lands*

Here, as elsewhere in the language, the masculine/feminine distinction is also used to express the dimension large/small.

All nouns inherently partake of the masculine-large/feminine-small opposition, and select appropriate pronouns; number-sets, common adjectives, and demonstratives also show the opposition:

	m.	f.
one	nelie	nënpeye
two	wiŋkes	wiëm
three	wiŋkes nelie	wiëm nënpeye
four	wiŋkes wiŋkes	wiëm wiëm

Demonstratives also show concordance for number:

		m.	f.
	Sg.	lepei/lëfe	nepei/nëfe
this/that	Du.	tepei/tëfe	mepei/mëfe
	Pl.	pepei/pëfe	pepei/pëfe

Nouns show morphological plurals, sometimes phonologically predictable, but often irregular; indication of plurality is never obligatory,

and is blocked by the presence of number-words or other plural markers. Some examples of common nouns will show the variation encountered in plural formation:

	Sg.	Pl.
banana	tëfa	tëfas
lip	lipef	lipowis
left hand	kenkaf	kenkawis
bird	nafële	nafëlepes
sore	pam	papes
black	ketëf	kesës
eye	löm	lös
coconut	wom	wefës
knife	e'af	elaŋkës
house	wënem	winaŋkou
fish	niël	niëŋku
pig	seŋke	soŋkou
father	yai	yaires
fingernail	nerëf	nurus

Word-order is less strict than in most non-Austronesian languages of the New Guinea area; the preferred basic orders are NA (noun-adjective) and SOV, but AN (adjective-noun) and SVO occur with relatively high frequency. In clause-sequences, true sentence-medial marking is absent.

Further lexical data for Olo can be found in the brief wordlists in Erdweg (1901) (under the name Anal), and in the Annual Reports 1924-5.

Essentially the same features as are found in Olo are found in Mountain Arapesh, but in that language a further complication is added by the presence of multiple noun-classification, with concordance for a large number of classes (thirteen being given in the grammar by Fortune (1942)) being obligatory for pronouns, common adjectives, and numerals; cross-cutting gender also occurs. Little semantic basis for the noun-classification has been found, and the system may be essentially phonological. The noun-classes are discussed at length by Fortune (1942), which remains useful for morphological features, although it is somewhat unreliable in phonology; similar data can be found in Gerstner (1963). There is some evidence, however, that the classification system is breaking down, as in other multiple-classifying languages of the Sepik region (Buna, 2.12.2. below; Murik, 2.11.3.3.); the numerals obtained by Laycock in 1971, from an informant from Matapau (essentially the same dialect as described by Fortune)

for counting *men* and *women* (the only classes tested; Fortune's classes VIII and IV) seem to be an amalgamation of several of Fortune's classes:

	Laycock Class *(men)*	Fortune Class VI	Fortune Class VII	Fortune Class VIII
one	atin	atun	anan	eɲeɲ
two	biam	biub	bium	bieʃ
three	bityatin	bibatun	bimatun	biʃatiɲ
four	nimbatity	nybatib[1]	nybatim[1]	nybatiʃ[1]

	Laycock Class *(women)*	Fortune Class IV	Fortune Class XII	Fortune Class XIII
one	atux	anoku	atuh	atuh
two	biou	biou	biaruh	bieh
three	biouatux	biwato'	biaruhatuh	bihatoh
four	nimbwatiux	nybatiu[1]	nybatuh[1]	nybatih[1]

Apart from the grammars by Foreman and Gerstner, and previous accounts of Sepik languages by Laycock (1965, 1968, 1973), the only published data on Mountain Arapesh consist of brief wordlists in the Annual Reports for Papua and New Guinea for 1923-4 (under the name Kavu), and in Klaffl and Vormann (1905).

Some languages of the Torricelli Phylum show divergences from the typical pattern. Urim (Kalp) lacks the subject-prefixes entirely (and also shows considerable lexical divergence); some languages of the Marienberg family (e.g. Muniwara, Mandi, and perhaps Buna) appear to lack the gender distinction; and Gnau shows clear morphological indication of tense in verbs, even to the extent of using some different subject-prefixes in the present and future tenses. But these divergences do not diminish the total impression of homogeneity of the phylum, an impression which suggests that the languages have not been diverging for an overly great period of time, and have maintained a high degree of contact during the divergence period. It is possible that more distantly-related languages have been obliterated by the incursions into the Torricelli area by speakers of Sepik-Ramu languages (Laycock 1965, 1973).

2.12.2. COMPOSITION OF THE TORRICELLI PHYLUM

The individual languages making up the Torricelli Phylum (77,028), with the number of speakers (as of January 1970), and family and stock membership, are as follows:

WEST WAPEI STOCK-LEVEL FAMILY			2474
One	2206		
Seta	155		
Seti	113		
WAPEI-PALEI STOCK			31770
Wapei Family		23378	
Olo	10821		
Elkei	1427		
Yau	140		
Yis	489		
Au	4007		
Yil	2134		
Ningil	523		
Alu	1880		
Galu	208		
Gnau	980		
Valman	700		
Yapunda	69		
Palei Family		3552	
Aru	125		
Aruop	330		
Aiku	819		
Nambi	484		
Kayik	769		
Agi	670		
Bragat	355		
Urat family-level Isolate		4840	
MAIMAI STOCK			5393
Maimai Family		3095	
Yahang	1001		
Heyo	1872		
Siliput	222		
Wiaki family-level Isolate		561	
Beli family-level Isolate		1241	
Laeko-Libuat family-level Isolate?		496	
KOMBIO STOCK			30155
Kombio Family		6852	
Lou	953		
Kombio	2146		
Yambes	860		
Wom	1885		
Aruek	614		
Eitiep	394		

Arapesh Family		23303	
Mountain Arapesh	10304		
Southern Arapesh	10646		
Bumbita	2353		
URIM STOCK-LEVEL ISOLATE			2358
MARIENBERG STOCK-LEVEL FAMILY			4018
Buna	1259		
Kamasau	787		
Elepi	149		
Muniwara	826		
Mandi	162		
Urimo	835		
MONUMBO STOCK-LEVEL FAMILY			860
Monumbo	450		
Lilau	410		

2.12.3. DETAILS OF INDIVIDUAL LANGUAGES

Further detail on individual languages, as well as the villages in which they are spoken, can be found in Laycock (1973). The languages are named, when not after a village or area, by the translation into that language of *no* or *there is none*; this practice has been widespread in the Lumi area for some time, and may antedate European contact, and the principle has been extended in naming languages outside the Lumi area.

None of the languages of the Torricelli Phylum have yet been studied in great detail. Fairly full bibliographical references are given in Laycock (1973), including ethnographic references; the following list gives major published linguistic work only, for Valman, Buna, Monumbo, and Lilau, the only other languages of the Torricelli Phylum that have received any attention (other references may also be found in 2.1.1. in this volume):

VALMAN Elementary grammars (of increasing accuracy) by Vormann and Schmidt (1900), Spölgen and Schmidt (1901), Klaffl and Vormann (1905); texts by Becker (1971); a short wordlist is also given by Erdweg (1901).

BUNA A grammar was compiled by Fr. F. Kirschbaum prior to World War II, but no longer seems to be extant. Kirschbaum's only other extensive comment on Buna (1922) is worth quoting in full; he speaks of

> ...meiner lieben Menschenfresser, der *Buna* bei *Marienberg*, die mit ihren neun *Nominal*-Klassen und den damit verbundenen Objekts-Suffixen und

> anderem schönen Anhängsel an der Spitze aller mir bekannten Ungeheuer sprachlicher Art marschieren. Wenn diese Menschenfresser, sie sind übrigens die einzigen, die ich in Neuguinea kenne, wenigstens noch nach bestimmten Gesichtspunkten ihre neun Klassen unterbringen lassen wollten, aber nein, ausser dem Unterschied nach natürlichem Geschlecht lässt sich, wenigstens ich habe die Hoffnung aufgegeben, absolut nicht einsehen, warum z.B. der Fingernagel nach Klasse A, der Finger nach Klasse B, die Hand nach Klasse C, der Unterarm nach Klasse D, der Oberarm nach Klasse E, der ganze Arm nach Klasse F. etc. geht. Dieses ist natürlich ein willkürliches Beispiel, in der Wirklichkeit treten die „Willkürlichkeiten", die doch ursprünglich sicher keine Willkürlichkeiten waren, womöglich noch krasser hervor. Ich bin zu ihren „Klassenbrüdern", zu den Bantu, nach Afrika gegangen: missglückt. Ich habe Lautbeeinflussungen beschuldigen wollen, auch diese sind unschuldig; ich habe meine Zuflucht zu den Geistern genommen, auch diese haben mich bisheran im Stich gelassen. Da ist nun weiter nichts zu tun übrig, als jedes einzelne Wort durch den Gebrauch zu erlernen.

Kirschbaum's description would fit Arapesh, but Laycock in 1971 (after admittedly only a brief informant session) was unable to confirm the existence of multiple-classes in Buna; numerals, usually a sure test of multiple-classifying systems, did not show concordance even for masculine and feminine nouns. This obviously requires further checking - although it is also quite possible that the multiple-classifying system has been dropped from the speech of young Buna speakers. (There is apparent evidence from other languages of Papua New Guinea - e.g. Murik (Lower Sepik Sub-Phylum, Sepik-Ramu Phylum), Buin (East Bougainville Stock, East Papuan Phylum) - that multiple-classifying systems are subject to rapid loss.)

MONUMBO and LILAU The principal documentation is the grammar by Vormann and Scharfenberger (1914) who regarded both Monumbo and Lilau as two dialects of a single language. A third dialect was reported then for the village of Dalua, which Z'graggen (1971) believes to speak Saki (a language of the Madang-Adelbert Range Sub-Phylum of the Trans-New Guinea Phylum - section 2.8.2.); it is possible that the village is, or was, bilingual. According to Z'graggen, Monumbo and Lilau share no more than 64% of basic vocabulary, and differ culturally; accordingly he regards them as separate languages. Capell (1952) follows Vormann and Scharfenberger in counting them as

dialects, but adds that 'the vocabulary diverges so far that one is inclined to class Lilau as a sub-language rather than as a dialect of Monumbo'.
The grammar by Vormann and Scharfenberger (1914) is extensive, and gives useful information on the class system, and a comprehensive lexicon; but it is unreliable on almost all other points. Nevertheless, it represents the only Monumbo-Lilau data extant.
As mentioned above, Schmidt (in Klaffl and Vormann (1905)) had observed the relationship of Valman to Monumbo; Kirschbaum (1926) postulated a link with Buna, probably independently of Schmidt's observation. The history of attempts to relate Monumbo-Lilau to other languages in the Sepik and Ramu regions is given by Z'graggen (1971:92-4).

2.12.4. CONCLUDING REMARKS

Obviously much more work needs to be carried out on this group of languages that we call the Torricelli Phylum, not least because it appears to be unique in the New Guinea area. Laycock (1968) mentioned the possibility that the Torricelli Phylum might extend further westward to take in Sko and Sangke, and 'probably other unstudied languages of the north coast of Irian Barat'; but there now appear to be no languages in West Irian which show any kind of obvious connection with the Torricelli Phylum. The further suggestion is made by Laycock (1973) that the Torricelli Phylum languages show features (particularly in the system of subject-prefixes) with the 'aboriginal' languages of the Malay Peninsula (Senoi, Semang); this suggestion is discussed in Chapter 2.16.1. in this volume. However, as these languages are now known to belong to the Mon-Khmer group, any Torricelli Phylum resemblances would most likely have to be assigned to the substratum features in the Senoi and Semang languages. But this is obviously a subject for further investigation, as is also the suggestion (in Laycock 1973) that speakers of Torricelli Phylum languages show a high correlation with a rare genetic marker (Ge a-; Booth 1971), and that documenting of this might give clues to the migrations of speakers of languages ancestral to those of the Torricelli Phylum.

N O T E

1. Fortune nowhere says, in his account of Arapesh phonology, that the stop /b/ (and presumably also /d/ and /g/) are prenasalised, at least in intervocalic position; but my data suggests this to be the case. However, there may be dialect differences in the degree of prenasalisation.

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P A R T 2.13.

THE EAST PAPUAN PHYLUM

2.13.1. THE EAST PAPUAN PHYLUM IN GENERAL

S.A. Wurm

2.13.1.1. INTRODUCTORY REMARKS

The East Papuan Phylum which comprises what has until quite recently (Wurm 1971) been regarded as the Bougainville Phylum, the Reef Islands-Santa Cruz phylum-level Family, and a number of isolates in the New Britain, New Ireland, Solomon Islands and Louisiade Archipelago areas, has been set up by the present writer (Wurm 1972a) on the basis of his own preliminary assessment of the available information and materials, and taking into account Greenberg's (1971) findings as well, though with some reservations in particular in view of his including a considerable number of Austronesian loanwords in his comparisons involving Reef Islands-Santa Cruz Family languages and the Papuan languages of the Solomon Islands, as has already been mentioned before by the present writer (Wurm 1970).

The classification presented below takes into consideration E. Todd's (see 2.13.2. in this volume) recent findings and constitutes a great improvement over the present writer's original classification given in Wurm 1972a. In particular, the languages of two of the three families postulated by him originally for the central Solomons area have in the light of Todd's work been found to be combinable into a single family, the Central Solomon Family. At the same time, the present writer feels that it may be a little premature to include Yele into that family as well, as E. Todd has suggested as a possibility (see 2.13.2.3.5.), and has decided, for the time being, to leave its original status as a family-level isolate within a stock unchanged.

At the same time, the present writer was able to include the three stock-level isolates listed in his Wurm 1972a classification, into the New Britain Stock. Wasi, classified in Wurm 1972a as a family-level isolate within the then Yele-Solomon-Wasi Stock has been re-classified

Wurm, S.A. "The East Papuan Phylum in General". In Wurm, S.A. editor, *New Guinea area languages and language study, Vol. 1, Papuan languages and the New Guinea linguistic scene.* **C-38:783-804**. Pacific Linguistics, The Australian National University, 1975. DOI:*10.15144/PL-C38.783*

as a family-level isolate in the New Britain Stock. All this has greatly simplified the internal classificatory picture of the East Papuan Phylum. Also, in following the lead laid down by Laycock (1973; also 2.11.2. in this volume) for the Sepik-Ramu Phylum, the present writer has decided to subdivide the East Papuan Phylum into three sub-phyla.

In its present preliminary form, the East Papuan Phylum is thought to consist of four stocks (two families - one of them doubtful - and one family-level isolate; one family and five family-level isolates; two families; one family and two family-level isolates) and one stock-level family.

Two each of the four stocks have been combined into super-stocks, and each of the two super-stocks and the stock-level family have been assigned sub-phylum status (for a definition of the terms super-stock and sub-phylum see 2.2.5. in this volume).

Apart from the sources quoted above, no studies having a bearing on the East Papuan Phylum languages as a whole are extant. Publications dealing with individual groups and languages in it will be referred to in the appropriate parts of this chapter section.

The East Papuan Phylum is wholly situated in the island world to the north-east and east of the New Guinea mainland, from New Britain and Rossel Island in the Louisiade Archipelago eastwards across the Solomon Islands chain to the Reef Islands-Santa Cruz Archipelago.

The members of the first of the stocks mentioned, the Yele-Solomons Stock, are located on Rossel Island in the Louisiade Archipelago off the eastern extremity of the New Guinea mainland, and on Vella Lavella, New Georgia, Rendova, Russell and Savo Islands in the British Solomon Islands chain.

This stock has been combined with the New Britain Stock mentioned below into the Yele-Solomons-New Britain Super-Stock because of considerable typological and structural similarities between members of the two stocks, and far-reaching agreements in the pronoun forms, even though lexical agreements between them are mostly not high. In the New Britain Stock, Sulka constitutes a link between the two stocks in showing similarities in several pronominal forms with some members of the Yele-Solomons Stock, especially Lavukaleve, in contrast to the other members of the New Britain Stock. At the same time, Sulka shows greater agreement with the other members of the New Britain Stock in features of its verb structure and on the lexical level, though standing apart from them and most other members of the East Papuan Phylum in lacking gender and class distinctions.

The remaining two stocks are situated on Bougainville Island at the western end of the Solomon Islands chain, and occupy much of the south-eastern three-quarters of the island - the north-western quarter and some coastal parts are Austronesian territory. They have been tentatively combined into the Bougainville Super-Stock in view of some typological features and pronominal forms shared by them in contrast to the Yele-Solomons-New Britain Super-Stock, and the likelihood that lexical agreements between members of the two stocks may well be in excess of what has been indicated by Allen and Hurd (1965). At the same time, it appears that lexical affinity between some members of the East Bougainville Stock such as Nasioi and members of the Yele-Solomons Stock such as Yele and Savosavo is somewhat greater than that between some members of the East and West Bougainville Stocks, but these lexical similarities are not greatly paralleled by comparable agreements on the pronominal, typological and structural levels, though some agreements on the level of noun classification exist between the two stocks which are absent from the West Bougainville Stock.

In other respects, the differences between members of the Bougainville and the Yele-Solomons-New Britain Super-Stocks both on the lexical and structural levels, are quite extensive, and in spite of the linking features between members of the two super-stocks as mentioned above and also below with regard to Yele, it was felt that it might be appropriate to assign separate sub-phylum status to both of them.

The first of the two stocks of the Bougainville Super-Stock, the East Bougainville Stock, is located in the south-eastern half of the super-stock area, and the second, the West Bougainville Stock, in the north-western half.

The Yele family-level Isolate in the Yele-Solomons Stock occupies a special position in constituting in some ways a link between the various groups mentioned so far. It shows comparatively high lexical agreement, apparently into the stock level, with Nasioi of the East Bougainville Stock, but agrees much more closely with the other members of the Yele-Solomons Stock on the pronominal, typological and structural levels, though lexically only on the stock level. At the same time, it agrees lexically with Baining and Sulka of the New Britain Stock on the stock level as well, and could conceivably be classified as a member of all three of the stocks mentioned on a purely lexico-statistical basis. This fact and other factors some of which have been briefly touched upon above suggest that the interrelationship between the various member groups and languages of the East Papuan Phylum may perhaps be closer than the present classification indicates.

It may be mentioned that Yele shows possible lexical links with Yareba of the Yareban Stock and phonological ones with Daga of the Dagan Stock (see 2.9.5.7. and 2.9.5.6. in this volume about these stocks) - both of the Trans-New Guinea Phylum - and appears to constitute a sub-stratum in them.

The Reef Islands-Santa Cruz Family is located on the Reef and Santa Cruz Islands far to the east of the main Solomon Islands chain. Its members have been subject to very strong Austronesian influence on all levels, and their originally Papuan structure and typology very strongly affected by this. They nevertheless display some clear connections with some other languages of the phylum on the structural level, some with members of the East Bougainville Stock such as the near-identity of most subject-suffixes on verbs in Santa Cruz languages and the Buin language of the East Bougainville Stock (Wurm 1969). Agreements on the pronominal level, predominantly with members of the Central Solomon Family and also Yele, but also with members of the New Britain and East Bougainville Stocks, are also present, and a number of lexical agreements, especially with members of the Yele-Solomons Stock, and to a lesser extent with East Bougainville Stock languages, are in evidence. Nevertheless, in view of the aberrant nature of the Reef Islands-Santa Cruz Family languages on some levels as a result of the very strong Austronesian influence on them, the family has been assigned subphylum status in the phylum. Its few links with members of the East Bougainville Stock are striking, but it also has pronounced links with members of the Yele-Solomons Stock, and the pervading Austronesian influence in them has obliterated most of the evidence which would contribute to making its more exact classification within the East Papuan Phylum possible.

For a map showing the location of the groups discussed above, see Map I in 1.3.4. and the map in 2.13.2. in this volume.

In their phonologies, the East Papuan Phylum languages are mostly of medium complexity to very simple - some of them such as members of the West Bougainville Stock, belong to the phonologically simplest languages of the world. At the same time, some member languages of the phylum such as Yele and those of the Reef Islands-Santa Cruz Family, show highly complex segmental phonologies with extensive phoneme inventories.

The most typical morphological feature of the languages of the phylum is an elaborate gender and class system with concord which is present in most of them. The genders and classes are marked by preposed particles or prefixes, postposed particles or suffixes, or both. There is some formal agreement between the class markers in languages

of various families and stocks of the phylum. Number indication in nouns is widespread, and the verb morphology is highly complex. The personal pronouns belong predominantly to sets II and III (see 2.3.3.3. and 2.3.3.4. in this volume), but set I (see 2.3.3.2.) forms are also quite strongly in evidence. The person, number, gender and class of the subject and object are indicated in the verb, and a dual number is very generally present. In spite of its complexity, the morphology is usually quite transparent, and morphophonemic changes are mostly few in number and not extensive. Medial verb forms occur in some language groups only, e.g. in East Bougainville Stock languages, and are comparatively simple.

2.13.1.2. THE YELE-SOLOMONS-NEW BRITAIN SUB-PHYLUM-LEVEL SUPER-STOCK

2.13.1.2.1. *THE YELE-SOLOMONS STOCK*

The Yele-Solomons Stock has recently been established by the present writer (Wurm 1972a). Of studies relating to its members, Ray 1928 and 1939, Lanyon-Orgill 1953, Capell 1969, Henderson 1975, the Hendersons 1974, and Todd (2.13.2. in this volume) may be mentioned as examples.

The Yele-Solomons Stock consists of two families and one family-level isolate, i.e.: 1) the Central Solomon Family comprising Bilua on Vella Lavella, Baniata on Rendova Island in the Georgia Archipelago, Lavukaleve on Russell Island and Savosavo on Savo Island, both near Guadalcanal; 2) the Kazukuru Family (now extinct) with Kazukuru, Guliguli and apparently Dororo, formerly on central New Georgia (the family status of this group is doubtful because of the limited materials available on its members); and 3) the Yele family-level isolate on Rossel Island in the Louisiade Archipelago, east of the south-eastern extremity of the New Guinea mainland.

This gives the following picture of the composition of the Yele-Solomons Stock (9350[1]):

1) The Central Solomon Family 6850
   - Bilua 4300
   - Baniata 900
   - Lavukaleve 700
   - Savosavo 950[2]

2) The Kazukuru Family
   - Kazukuru
   - Guliguli
   - Dororo

3) The Yele family-level Isolate 2500

The lexical relationship within the two families is on the low to low-medium family level, with percentages of shared basic vocabulary cognates in the Central Solomon Family ranging from the low thirties to the low forties, and between the families and between them and the family-level isolate Yele on the low to low-medium stock level with percentages of basic vocabulary cognates shared between Yele and members of the Central Solomon Family for instance generally ranging from the low to high teens. However, the presence of a considerable number of Austronesian loan items in the basic vocabulary of all the languages involved has had a strongly deflating effect on the percentages of original, i.e. Papuan, cognates shared by the individual languages, and undoubtedly their original lexical interrelationship used to be much higher than the figures referred to above may suggest.

Agreements on the pronominal, structural and typological levels within and between the three family-level groups and entities are considerable, though there are differences in detail.

Typological characteristics of the languages of the stock include phonological systems of predominantly only low to medium complexity (the presence of four linear distinctions with stops and nasals, including a palatal point, is notable) except for Yele which has a quite complex segmental phonology. Supra-segmental systems appear to be simple. On the morphological level, the presence of overt noun classification with concord is important with the genders or classes which range from two to four or five in the different languages, predominantly indicated by preposed particles, postposed particles, and sometimes also formal changes in the nouns themselves. Third person pronouns have masculine and feminine, and in some languages also one or two neuter forms. Some cross-cutting with the class systems in other word categories appears to be present. In all languages of the Central Solomon Family, an inclusive-exclusive contrast in the first person non-singular pronouns is present. Non-singular forms of nouns are denoted by special forms of the class particles and in some instances (especially in Lavukaleve) also by changes in the form of the noun. A dual number is generally present, in Baniata also a trial. With the verb, the subject is predominantly indicated by preposed particles or prefixes, and the object by suffixes, sometimes also by prefixes. The class systems are reflected to some extent in the marking of person with verbs. Tense, aspect and modal systems are generally elaborate and denoted mostly by suffixes, sometimes by particles. Sentence-medial verb-forms appear to be absent.

A detailed discussion of the languages of the Central Solomon Family and some notes on Yele are given in 2.13.2. in this volume.

2.13.1.2.2. *THE NEW BRITAIN STOCK*

The New Britain Stock has also been set up recently by the present writer. Of studies concerning its members, Rascher 1904, Parkinson 1907, H. Müller 1915-16, Laufer 1950, Futscher 1959, Schneider 1962, Chowning 1969 and the Parkers 1974 may be mentioned here.

The New Britain Stock consists of one family and five family-level isolates, i.e.: 1) the Baining-Taulil Family occupying most of the Gazelle Peninsula, with Baining taking up most of the family area, Taulil located on its central northern fringe, and Butam (extinct) previously to the east of the Taulil region; 2) Sulka on a narrow coastal strip on the southern side of Wide Bay and previously also in a small area on the north-eastern coast of the Gazelle Peninsula (Laufer 1950); 3) Kol occupying most of the interior of the extreme eastern portion of New Britain, south of the Gazelle Peninsula and north of Jacquinot Bay (Chowning 1969). There are two main divisions: Sui in the north and Kol proper in the south; 4) Wasi (or Peleata) in the interior of the eastern half of New Britain within the north-eastern section of the West New Britain District, about half-way between the Gazelle and Willaumez Peninsulas; 5) Anem in a few coastal villages and extending inland for a short distance along the Banu River, on the north coast of the western half of New Britain, about half-way between Willaumez Peninsula and the western end of New Britain; 6) Panaras (or Kuot) in a small portion of north-western New Ireland.

This gives the following picture of the composition of the New Britain Stock (9400[3]):

1)	The Baining-Taulil Family		4900
	Baining	4500	
	Taulil	400	
	Butam	extinct	
2)	Sulka family-level Isolate		1100
3)	Kol family-level Isolate		1500
4)	Wasi (or Peleata) family-level Isolate		500
5)	Anem family-level Isolate		500
6)	Panaras (or Kuot) family-level Isolate		900

Within the Baining-Taulil Family, the relationship between Taulil and Butam is very close and almost on the dialect level. Baining itself consists of five very divergent dialects (e.g. Gaktai) which are almost sub-languages. The lexical relationship between Baining and Taulil-Butam is quite low, a long way below the family-level, because a major proportion of the basic vocabulary of the latter two languages

consists of loans from the Austronesian Tolai. However, their comparatively close relationship to Baining is quite obvious on the pronominal, structural and typological levels, and in view of this it has been decided to include all three into the same family.

Sulka shows a medium stock-level lexical relationship with Baining, with percentages of shared basic vocabulary cognates in the high teens, but its lexical relationship with some members of the Yele-Solomons Stock is only a little lower, still well within the stock level. At the same time, it shows much closer agreement with the latter languages, especially with Lavukaleve, on the pronominal level, than with Baining. However, in other structural and typological features it shows closer parallelism with Baining than with the members of the Yele-Solomons Stock, and has therefore been included in the North New Britain Stock, though its position appears to be to some extent intermediate between the two stock members of the super-stock. It contrasts with members of both stocks in lacking gender and class distinctions.

The lexical relationship of the remaining four family-level isolates in the stock to the Baining-Taulil Family and to Sulka is on the low to medium stock level, with percentages of basic vocabulary cognates shared by the languages ranging from the very low to the high teens. On the structural level, there is, except for Panaras, a certain amount of formal agreement in pronominal forms between these family-level isolates, and between them and members of the Baining-Taulil Family, but they all appear to lack the masculine-feminine distinction in the third person singular pronouns which characterises the members of that family. With other structural features, overall agreement appears to be of a comparatively high order, as far as this can be ascertained from the limited amount of material available.

On the phonological level, the members of the stock show medium to comparatively high complexity on the segmental level. Phoneme inventories are quite extensive in some languages, phonemes infrequently met with in Papuan languages such as voiceless velar fricatives occur, and initial and other consonant clusters are met with. On the structural and typological levels, the characteristics of the members of the stock comprise the presence of a dual number and of morphologically signalled non-singular forms of nouns. All the languages except Sulka appear to have noun classes with concord (apparently five in Baining), though the materials are inconclusive in this respect for Kol and Panaras. In the languages of the Baining-Taulil Family, a masculine-feminine distinction in the third person singular pronouns is met with. The subject of the verb is indicated by preposed - or postposed, e.g. in the Baining-Taulil Family - person markers which

are derived from the personal pronouns. In the Baining-Taulil Family, tense, aspect and other particles precede the preposed subject markers, whereas in Sulka they follow them, and the subject markers themselves undergo changes in the various tenses and aspects. The object is marked by postposed pronominal particles, and at least in Sulka, the verb stem undergoes changes if the object is in the plural. Changes in the verb stems indicate various modal forms. Simple sentence-medial forms only denoting identity of the subjects have been observed at least in Sulka.

2.13.1.3. THE BOUGAINVILLE SUB-PHYLUM-LEVEL SUPER-STOCK

The language group known now as the Bougainville Super-Stock was established by Allen and Hurd (1965) as the Bougainville Phylum after earlier work in classifying the languages had been carried out by Capell (1962).

It is wholly situated on Bougainville Island, east of New Britain and New Ireland, at the western end of the Solomon Islands chain, and occupies much of the south-eastern three-quarters of the island. The north-western quarter and some coastal parts of the remainder of Bougainville are occupied by Austronesian languages.

For further discussion of the classificatory problems impinging upon this super-stock see above 2.13.1.1.

2.13.1.3.1. *THE EAST BOUGAINVILLE STOCK*

The East Bougainville Stock has been set up by Allen and Hurd (1965) with earlier work in this direction carried out by Rausch (1912). Recent studies of the stock member languages have been carried out by the Hurds (1966, 1970) and Laycock (1969, 1976).

The East Bougainville Stock languages occupy the south-eastern half of the super-stock area.

The composition of the East Bougainville Stock (35,200[4]) is as follows:

1) Nasioi Family 19100
   - Nasioi dialects 14100
     - Nasioi 13000
     - Simeku 1100
   - Nagovisi 5000

2) Buin Family 16100
   - Buin dialects 9500
     - Buin 8300
     - Uitai 1200

Siwai dialects		6600
Siwai (or Motuna)	6000	
Baitsi (or Sigisigero)	600	

The interrelationship between the two members of the Nasioi Family is on the medium family level, with the percentage figures of basic vocabulary cognates shared by them according to Allen and Hurd, lying over fifty. In the light of what has been said below about the Buin Family it seems likely that they are in fact even higher than that.

The interrelationships within the two members of the Buin Family is on the low medium family level. The percentages of basic vocabulary cognates shared between them as given by Allen and Hurd are in the mid-thirties, but more recent studies (D.C. Laycock, personal communication) suggest that these may be too low, and that the figures lie above forty.

The lexical interrelationship between the two families is quite close, with figures given by Allen and Hurd (1965) ranging from the high teens to the high twenties. In the light of what has been said above, it seems possible that the two families may in fact be combinable into a single family. The relationship between members of the two families on the typological and structural levels is quite close.

Typological and structural characteristics of the languages of the East Bougainville Stock include very simple segmental phonologies with small phoneme inventories, and a low incidence of morphophonemic changes. In spite of their complexity, the morphologies are highly transparent. Suffixes are generally employed. One of their main characteristics is a complex classification of nouns into upwards of forty classes and in some of the languages such as Buin and Siwai, a cross-cutting gender system carrying over to noun-adjuncts, possessives and to some extent, verbs. The indication of the classes and genders is by suffixed markers. A dual number is universally present. The pronouns belong predominantly to sets I and Ia (see 2.3.3.2. and 2.3.3.5. in this volume), the characteristic Trans-New Guinea Phylum sets (other general Trans-New Guinea Phylum typological characteristics such as the presence of an obligatorily possessed class of nouns (see below) and medial verb forms with identical subject - non-identical subject distinction are also present in the languages). A masculine-feminine distinction is present in the third person pronoun forms of all numbers. The conjugation of the verb is by suffixes and the person and number of the subject is indicated with the verb. Indication of the object with the verb is found. Sentence-medial verb forms occur and different forms are present to denote identity or non-identity

of the subjects. Negation with verbs is indicated by a preposed clitic.

A few notes on Buin (Laycock 1976) may be added here:

Phonology

Consonants

p	t	k
		g
m	n	ŋ
	r	

Vowels

i	u
e	o
a	

Syllable structure is simple.

Morphology

Numerals and Adjectives

Different sets of numerals are present for different classes of nouns, e.g. male humans: *one* = nonumoru, female humans: *one* = nonumara, etc. Some adjectives have different forms according to whether the noun qualified by them indicates a person, place or thing, e.g. rirogagi = *new* (= *young*) *person*, rirogou = *new place*, rirogupa = *new thing*.

Nouns

Relations are expressed by suffixes, and an agentive is present. Nouns denoting kinship terms are obligatorily marked for possession, e.g.

moka = *my father*
ruumo = *your* (sg) *father*
puumo = *his father*
reumo = *our father*
raumo = *your* (pl) *father*
paumo = *their father*

Kinship terms are marked for number, e.g. reumouko = *our two fathers*, reumoki = *our fathers*.

Pronouns

The basic personal pronouns are:

	1st	2nd	3rd m.	3rd f.
sg	(n)ne	ro(o)	ako	eko
dl	re(e)	rai	aroko	itoko
pl	re(e)	rai	igoko	emiko

For groups consisting of both men and women, the feminine non-singular forms are used.

Verbs

Final and medial verbs are distinguished. With both, the person and number of the subject are indicated by suffixes, but the masculine-feminine contrast observable with pronouns is not shown. The person of the object is denoted in the verbs. Four main conjugational classes, with sub-classes, exist, and are marked by the appearance of thematic consonants added to the verb stem.

The forms of the subject markers vary according to tense/aspect and other factors. Four tense/aspects are distinguished (present, immediate future or past, mediate past, remote past).

The present subject markers of p-class verbs are for instance:

	1st	2nd	3rd
sg	-o	-e	-u
dl	-oge	-ere	-ure
pl	-ogi	-eŋ	-a -are -aŋ

e.g. with mina = *hide*, the 1st and 2nd sg are: mina-p-o, mina-p-e.

If *hide* takes a 2nd person object, its thematic consonant changes to -r-, e.g. mina-r-o = *I hide you* (sg). If the object is the 1st person, the thematic consonant changes to -m-, e.g. mina-m-e *you* (sg) *hide me*.

Static and dynamic forms are distinguished in the verb, and benefactive, causative, reciprocal, reflexive, impersonal, multiple object, and various other forms are distinguished. The combination of several of these forms in one verb-form can result in highly complex forms. Imperative forms occur in all persons. The negative is denoted by a particle placed before the verb.

With medial verbs, identity of the subjects of the two successive clauses is denoted by the use of the mediate past tense forms with the medial verb, whereas subject change is indicated by a variety of suffixes, one of them the suffix -ku (with 1st person forms) and -gu

(with non-first person forms), with the verb appearing in the immediate tense forms; e.g. tee-p-ui-gu aa-p-uriro oo = *when he had spoken, they two said "yes"* = ([*speak*]-[thematic consonant]-[3rd sg subject in immediate tense form]-[change of subject marker]) ([*say*]-[thematic consonant]-[3rd dl subject in mediate tense form]) *yes*.

2.13.1.3.2. *THE WEST BOUGAINVILLE STOCK*

The West Bougainville Stock has been established by Allen and Hurd (1965). Studies in member languages of the stock were undertaken by A. Müller (1954), Firchow (1969, 1970, 1971), and the Firchows and Akoitai (1973).

The West Bougainville Stock languages occupy the north-western half of the Bougainville Super-Stock area.

The composition of the West Bougainville Stock (8000^{5}) is as follows:

1) Rotokas Family 5500
   - Rotokas dialects 4320
     - Rotokas 4200
     - Atsilima 120
   - Eivo 1200
2) Konua family-level Isolate 1500
3) Keriaka family-level Isolate 1000

The interrelationship of the two members of the Rotokas Family is on the low medium family level and comparable to that observable with regard to the two members of the Nasioi Family of the East Bougainville Stock. The same remarks as made about those above in 2.13.1.3.1. may well apply to the two members of the Rotokas Family.

The lexical interrelationship between the three family-level members of the West Bougainville Stock is close and it seems quite likely that it may be possible to unite them all into a single family considering what has been said in 2.13.1.3.1. about Allen and Hurd's (1965) percentage figures of basic vocabulary cognates shared by various languages within the Bougainville Super-Stock being perhaps too low. Allen and Hurd give inter-family cognation percentages for the West Bougainville Stock which range from the low twenties to the thirties - if the former prove to be in reality higher by only a few percent, all three family-level members of the stock would lexically constitute members of a single family.

The typological and structural similarities between the family-level members of the West Bougainville Stock are comparatively close.

Typological and structural characteristics of the languages of the West Bougainville Stock include extremely simple segmental phonologies with very small segmental phoneme inventories. For instance, the phoneme inventory of Rotokas (Firchow 1969) is as follows:

Consonants

p	t	k
β	ɾ	g

Vowels

i	u
e	o
a	

One very unusual feature is the lack of nasal consonants.

At the same time, in Rotokas at least, there is a complex supra-segmental phonology in which length and stress patterns play a part.

Their morphologies are complex but less so than those of the languages of the East Bougainville Stock. They are highly transparent.

The languages of the West Bougainville Stock lack the numeral class system met with in the East Bougainville Stock languages, but show gender distinction in the third person singular pronouns. Their pronouns belong largely to sets I and II (see 2.3.3.2. and 2.3.3.3. in this volume). In Konua, inclusive and exclusive forms are distinguished in the first person plural. In general, their noun and verb morphologies show features similar to those of the West Bougainville Stock languages, but their gender (and number) marking through suffixes is in some ways comparable to that encountered in languages of the Yele-Solomons Stock (see above 2.13.1.2.1.). An obligatorily possessed category of nouns exists, and possessive suffixes are present in Konua. With the verbs, the subject and tense markers are clearly separable, with the first preceding the latter, and object marking with the verb is through special pronominal elements preceding the verb. There is little information in the materials concerning medial verb forms, but some simple forms appear to be present.

2.13.1.4. THE REEF ISLANDS-SANTA CRUZ SUB-PHYLUM-LEVEL FAMILY

The Reef Islands-Santa Cruz Family was established by Davenport (1962) and independently by the present writer (Wurm 1969), whose views regarding the distribution of languages within the family and their respective status, differ somewhat from those expressed by Davenport. The family is located in the Santa Cruz Archipelago, east of the Solomon Islands, and occupies the greater part of the Reef

Islands in the northern part of the Archipelago and the main island of Santa Cruz itself.

Studies relating to languages of the Reef Island-Santa Cruz Family have been carried out by the present writer (Wurm 1969, 1970, 1972b).

According to the present writer's classification, the composition of the Reef Islands-Santa Cruz Family (7250[6]) is as follows:

Reefs Sub-Family			3800
Reefs	3800		
Santa Cruz Sub-Family			3450
Löndäi (or Nambakaengö)		2000	
Nea dialects		1200	
Western dialect (e.g. Nemboi)	750		
Eastern dialect (Nooli)	450		
Nanggu		250	

The interrelationship between the members of the Santa Cruz Sub-Family is close, with percentages of shared basic vocabulary cognates ranging from the low fifties to the high sixties. The lexical interrelationship between them is paralleled by very considerable agreements on the typological and structural levels.

The lexical relationship of Reefs to the members of the Santa Cruz Sub-Family is on the medium family level, with percentages of shared basic vocabulary cognates ranging from the high thirties to the low forties. Typological and structural similarities between the two subfamilies are quite marked.

The languages of the Reef Islands-Santa Cruz Family have been subject to extremely strong Austronesian influence of various kinds (Wurm 1969, 1970), with the result that more than half of their basic vocabularies is Austronesian, and that quite a few of their pronominal elements and much of their typology and structure have been taken over from Austronesian languages. With many grammatical features, the typological principles involved are basically Austronesian, but the individual bound morphemes appearing in connection with them are often formally non-Austronesian. At the same time, they contain a number of features which are Papuan and link with those of other members of the East Papuan Phylum (see above 2.13.1.1 and (II) 4.5.3.).

Some of the typological and structural features of members of the family are as follows:

The languages have quite complex phonologies and extensive phoneme inventories with a high number of vowel phonemes (seven to ten) and in addition, phonemic nasalisation with vowels in the Santa Cruz Sub-Family languages.

Inclusive and exclusive forms are distinguished in the first person non-singular personal pronouns and bound pronominal elements. The first person inclusive forms show one number additional to the full number range of the respective language, i.e. the Reef Islands language has singular, dual and plural, and has an additional trial number in the first person inclusive person marker. The Santa Cruz Sub-Family languages have a dual in that person, and only singular and plural in other persons.

An obligatorily possessed category of nouns is present which carry possessive suffixes. With other nouns, possession is denoted through preposed possession markers to which person markers are suffixed as is the case in Austronesian languages of Melanesia, but the forms of the affixes are often non-Austronesian, and the possession markers belong to a considerable number of semantically determined classes (e.g. fourteen in Löndäi (Wurm 1972b). The same possession markers, suffixed to an invariable element, constitute the personal pronouns.

In Reefs, a four-class system affecting the numerals has been observed, and traces of this are present in the other languages. A rudimentary noun class system through prefixes is present in the languages of the Santa Cruz Sub-Family.

The indication of the subject with verbs is generally by suffixes. In Reefs, the person of the subject of an intransitive verb is indicated by a particle preceding the verb, but the number of the subject is denoted by a marker suffixed to the verb. The person and number of the object is indicated with verbs, also by suffixes which follow the subject suffixes, and another set of suffixes appears immediately after the verb stem to denote in an anticipatory manner, the person of the object to be referred to subsequently by formally different person, and number, suffixes. Markers, usually suffixed, indicating the direction of actions are present, and a number of tenses, aspects and moods are distinguished, predominantly by prefixes. Discontinuous morphemes occur in the verb morphology. Simple medial verb forms seem to occur in Santa Cruz Sub-Family languages, and nominalized verb forms play an important part.

More details on the structure of the languages of the Reef Islands-Santa Cruz Family have been given in (II) 4.5.3.

2.13.1.5. SUBSTRATUM INFLUENCE IN THE EAST PAPUAN PHYLUM

One point of interest is the presence of some apparently Trans-New Guinea Phylum substratum influence in East Papuan Phylum languages, especially those of the East Bougainville Stock (see above 2.13.1.3.1.).

There is little formal Trans-New Guinea Phylum influence in the structure of the languages except apparently in the forms of the personal pronouns, but the principles underlying some structural and typological features of the East Bougainville Stock languages are reminiscent of those met with in many Trans-New Guinea Phylum languages, and contrast with those of other languages in the East Papuan Phylum. Trans-New Guinea Phylum loanwords are present in the languages of that stock, but are also found in other languages of the phylum. In this connection, it may be noted that East Papuan Phylum lexical elements and features, especially of Yele, are found in Trans-New Guinea Phylum languages of the south-eastern part of the New Guinea mainland as a substratum (see above 2.13.1.1.) and it seems likely that the speakers of at least some East Papuan Phylum languages were driven out of the New Guinea mainland by speakers of Trans-New Guinea Phylum languages (see 3.4.1. in this volume).

N O T E S

1. The figures are approximate and based on 1970 census figures.

2. Knowledge of Savo is rapidly declining amongst members of the younger generation, and of the 950 people given as Savosavo speakers, less than a quarter may have a good command of the language.

3. The figures are approximate and based on 1970 census figures.

4. The figures are approximate and based on 1970 census figures.

5. The figures are approximate and based on 1970 census figures.

6. The figures are approximate and based on 1972 census figures.

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2.13.2. THE SOLOMON LANGUAGE FAMILY[1]

Evelyn M. Todd

2.13.2.1. INTRODUCTORY REMARKS

Although most of the languages of the Solomon Islands belong to the Austronesian family, there are a few languages that have been broadly classified as Papuan in type, that is, presumably related to the non-Austronesian languages of New Guinea. Recent study indicates that four of these languages - Savosavo, Bilua, Baniata, and Lavukaleve - are genetically related, and that reconstruction of proto-forms may soon be achieved. Yele, a Papuan-type language to the west, in the Louisiade Archipelago, has a number of interesting resemblances to these languages, and may be genetically related also. This group of five languages is herein designated as the Solomon Language Family because the languages are spoken on islands on the periphery of the Solomon Sea. The Solomon Language Family is defined as including Savosavo and all languages genetically related to it, such that reconstruction of Proto-Solomon forms is possible through the formulation of sound laws. The validity of this grouping will depend on the success of reconstruction attempts.

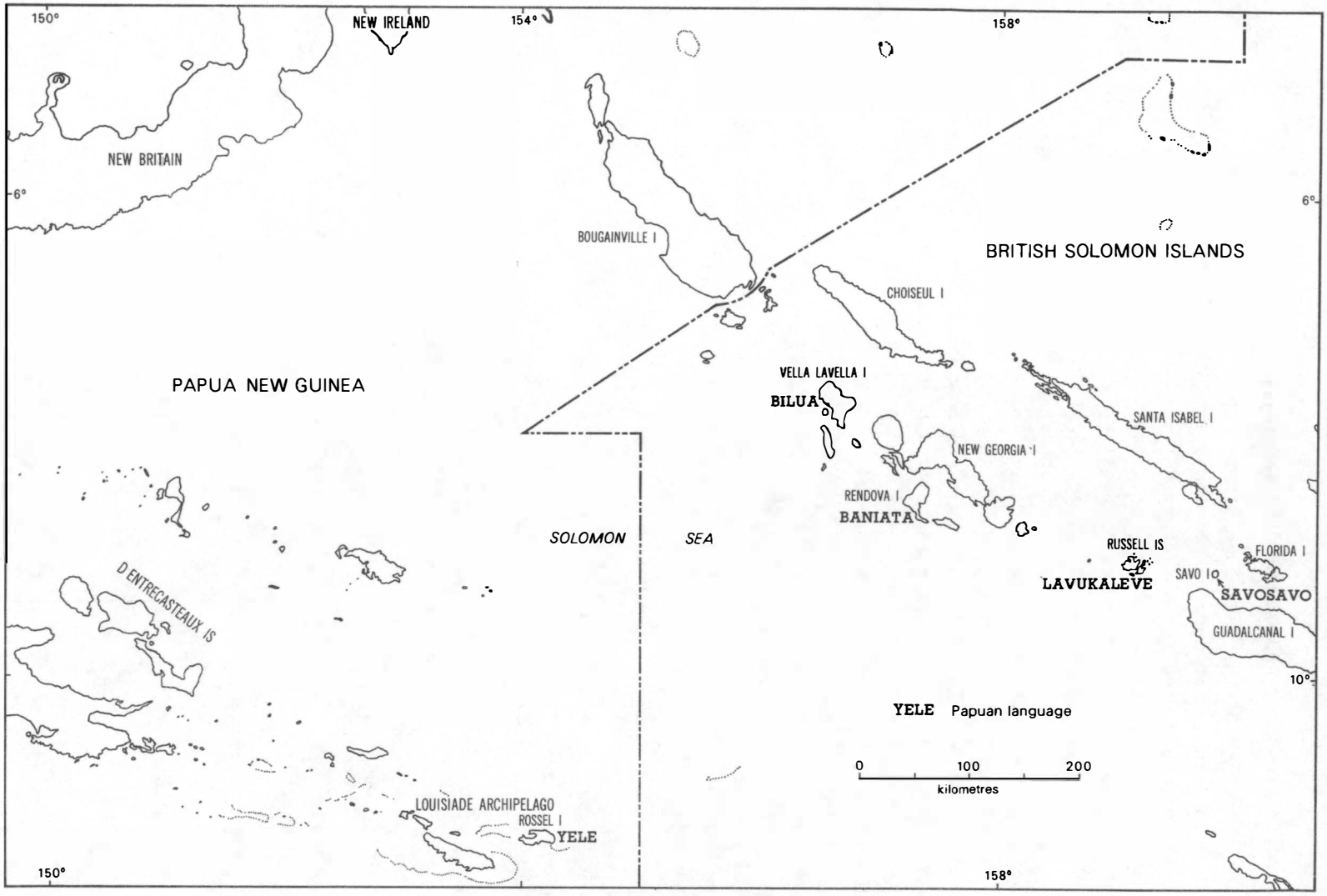
Savosavo is spoken on the island of Savo off the north-western coast of Guadalcanal. Because of intermarriage and general proximity, most speakers of Savosavo can understand or speak one of the local Austronesian languages, Nggela (Ḡela) of the Florida Islands, or Nggai (Ḡai) of Visale on Guadalcanal. There are at present no Savosavo liturgical materials. The Anglicans use Nggela materials in their services and the Roman Catholics use materials in Gari, another Austronesian language of western Guadalcanal. A great deal of the Savosavo vocabulary corresponds to that of these Austronesian languages and a high level of Austronesian borrowings is likely to impede reconstruction.

Todd, E.M. "The Solomon Language Family". In Wurm, S.A. editor, *New Guinea area languages and language study, Vol. 1, Papuan languages and the New Guinea linguistic scene.* **C-38:805-848**. Pacific Linguistics, The Australian National University, 1975. DOI:*10.15144/PL-C38.805*

Lavukaleve is spoken in a few communities in the northern and eastern Russell Islands. Many speakers are bilingual but there appears to be less Austronesian influence on the vocabulary than is the case for Savosavo. The Lavukaleve version of the Anglican liturgy for Melanesia, *Hai-Foiae Sevo Lavu Kaleve Ena* was printed for the first time in March 1973. Baniata is spoken on the southern half of Rendova Island. There are no publications in the language. Roviana, an Austronesian language, is the dominant language of the New Georgia area, and there are several other Austronesian languages in the vicinity as well. Bilua of Vella Lavella Island has likewise been overshadowed by Roviana, although a New Testament and collection of hymns have been published.

Only scraps of information describing these languages have been available. Codrington (1885:559-65) wrote a brief sketch of Savosavo, while Ray (1928) and Capell (1969) have provided some word lists and comparative material for syntactic studies. An examination of these and the few other published materials on these four languages led the author to conclude that investigation of a possible genetic relationship was merited on account of similarities in the systems of noun classification and verb inflection, as well as formal resemblances in some personal pronouns. Greenberg (1971:816-18), using the same data and some unpublished materials on Savosavo, concluded that these four languages constituted a subdivision of his Indo-Pacific family which he named the Central Solomon sub-group. But the absence of any substantial descriptive materials on these languages has made it difficult to prove genetic relationships in any linguistically sound manner. Field research was undertaken by the present author in 1972-73 to describe Savosavo as thoroughly as possible and to begin an investigation of other non-Austronesian languages of the southwestern Pacific that have similar systems of noun-classification, with a view to providing further descriptive and comparative studies in future. The present grouping of Savosavo, Bilua, Baniata, and Lavukaleve in the Solomon Family is based primarily on this recent field work,[2] and analysis of the materials obtained is by no means complete, but it is expected that the conclusions presented here will only be strengthened by the further processing of data. Comparative materials on Yele are sparse and will be presented after a discussion of the four languages of the British Solomon Islands.

The location of Savosavo, Bilua, Baniata, Lavukaleve and Yele is shown on the map following - see also Map I in 1.3.4. in this volume.



THE SOLOMON LANGUAGE FAMILY

2.13.2.2. PHONOLOGY AND ORTHOGRAPHY[3]

The phonology of the languages other than Savosavo has not been studied in depth. For purposes of comparison the orthography of Savosavo has been used for the other three languages, with some supplementary symbols as necessary. This orthography is quite compatible with that used in the Austronesian publications of the Provincial Press (Diocese of Melanesia), and was rapidly learned by Savosavo research assistants. Where the Provincial Press uses italics a typed macron is used in this orthography and some native speakers prefer underscoring. The use of the letter q to represent the prenasalized velar stop, as in Fijian, is more general in the Western Solomons. In writing Baniata the informant used both open ɔ and closed o, presumably because of previous contact with linguists, and he also indicated vowel length with a colon. Occasional nasalization in Baniata has not been shown. The symbol c is used for affricate [ts] in Baniata, and the sequence ni in both Baniata and Bilua may prove to be a unit ñ. In Lavukaleve vowel length may prove to be significant but has not been indicated, and in Savosavo no rule of automatic stress placement has been formulated so that stress should be marked but is not. Yele data are cited in the transcription of the various sources.

SAVOSAVO PHONEMES

Vowels

	Front	Back
High	i	u
Mid	e	o
Low	a	

Consonants

		Bilabial	Alveolar	Palatal	Velar
Stops	-vless	p	t		k
	-vcd and prenasal.	b	d	j	ḡ [ŋg]
Nasals		m	n	ñ	n̄ [ŋ]
Fricatives -slit	-vcd	v			g
-groove	-vless		s		
	-vcd		z		
Lateral			l		
Flap			r		

2.13.2.3. MORPHOLOGY

2.13.2.3.1. *NOUN CLASSIFICATION*

Noun classification in the Solomon languages has been discussed by Capell (1969:3-10). All the languages have a gender system with masculine-feminine in all, but neuter only in Lavukaleve and Baniata, the latter having at least two neuter categories. (The possible third neuter category of Baniata includes mass nouns which are marked formally in the same way as plurals of other neuter nouns.) The languages differ in the way the lexicon is divided according to gender, but in all of them truly male beings are always masculine and truly female beings are always feminine in gender. It is the system of concord that is probably most interesting for comparative purposes, for here Savosavo, Bilua, and Baniata have much in common while Lavukaleve has several points of difference.

2.13.2.3.1.1. Pre-nominal Particles

Nouns in Savosavo, Bilua, and Baniata are often preceded by particles indicating gender or number or both. In Bilua only singular nouns are accompanied by such particles, and only in Baniata is gender indicated in the non-singular forms. These pre-nominal particles are listed below:

		Savosavo	Bilua	Baniata
Singular	m.	lo	vo	zo
	f.	ko	ko	vo
	n.1			na
	n.2			ñɔ
Dual	m.	to		zere
	f.	to		robe
	n.			rede
Trial	m.			nɔ
	f.			nu
	n.			na
Plural	m.	lo		mɔ
	f.	lo		mɔ
	n.			nɔ

It is noteworthy that the particles are generally of a CV formation, but even more striking that the most common type is consonant plus o. The masculine-feminine distinction is lost in non-singular particles in Savosavo where singular masculine lo is extended to the plural,

but Baniata retains the distinction except in the plural. Although Bilua and Savosavo share ko as feminine singular pre-nominal particle, the lexical division is quite different, with most nouns denoting objects without sex being grammatically feminine in Bilua, but masculine in Savosavo. The similarity of form and function of these particles is taken as evidence of a genetic relationship among the Solomon languages.

There is no great similarity in the plural formation of nouns in the three languages with pre-nominal particles. Savosavo nouns take the suffixes -lo (dual), -ga (plural)(exceptional cases include the occurrence of a dual suffix -to in the expression edo toneto *two brothers*, and the dual suffix -zalo which apparently occurs as an optional form with nouns denoting persons, as in ñubazalo *children* d.) Bilua nouns do not appear to have any dual forms distinct from the singular, but in the plural a postposition (or suffix?) poso occurs, e.g. meǧora *child*, meǧora poso *children* p. Baniata nouns often have number suffixes, but there is insufficient data to determine when these are required. The Baniata number suffixes are usually but not always the same in form as the corresponding pre-nominal particles: singular -zo m., -vo f., -na n.1, -nɔ̃ n.2; dual -zere m., -robe f., -rede n.; trial -nɔ m., -nu f., fiɔ n.; plural -mɔ m/f., -cɔ n.

2.13.2.3.1.2. Post-nominal Particles

In Lavukaleve nouns are frequently followed by particles expressing number and gender, and these forms also occur as suffixes in demonstrative pronouns.

		Lavukaleve
Singular	m.	na
	f.	la
	n.	ga
Dual	m.	nala
	f.	la
	n.	gala
Plural	m/f/n.	va

The syntactic functions of these post-nominal particles have not been fully explored. They occur after subject nouns in intransitive sentences:

solo la sasako tuna feo	*the hill is very steep*
tea ga iaia tuna siare ñakotavaña okui	*the tea is so hot it burnt my throat*

Noun objects of transitive verbs are also accompanied by a post-nominal particle:

foina namu ga erumem	*he is digging the garden*
ñai malagul na akim	*I shot a bird*
uruala fi vovou na aoma	*she held the baby gently*

Particles may occur with both subject and object nouns:

lai ga kiv va suni osuriv	*the rain has made all the clothes wet*

A noun denoting a location may have a post-nominal particle:

sasaev va naul ga ena nanamuanuv	*the coconut leaves are waving in the wind*

Post-nominal particles are omitted when the noun is possessed, when a demonstrative pronoun accompanies the noun, and in other unexplained circumstances:

okala () otoirem fin	*his mother will help him*
tea hoga () iaia eu ena	*this tea is too hot to drink*
raula fi mitakeu () aokuru	*he hit the dog hard*
ñai kiv () vovai filame	*I am washing clothes*

Number and gender categories are overtly expressed in Lavukaleve nouns as well as in post-nominal particles. (The degree of correlation between gender and particular number suffixes has not yet been determined.) Duals are formed with a suffix -l ∿ -al ∿ -ol. Plurals are formed with a variety of suffixes including -kal, -al, -ul, -vil, -n, -an, -verav, -v, -vasa.

	Singular	Dual	Plural
volcano	biti	bitil	bitikal
star	simu	simul	simual
stone	beko	bekol	bekoul
knife	uia	uiaol	uiavil
breadfruit	ula	ulal	ulan
bow	feil	feilal	feilan
kumara	umalau	umalaul	umalauverav
clothing	ki	kil	kiv
his sister	anemea	anemeaol	anemevasa

Sometimes the plural is indicated by the loss of a final vowel.

stick	houla	houlaol	houl

Suppletive plurals and other irregular stem forms occasionally occur.

man	ali	airal	malav
woman	aira	airaol	airavil
child	vovou	vovoul	tulav
my son	ñavou	ñavoul	ñavoukal
my daughter	ñavovo	ñavovol	ñavovokal

The dual suffix -lo in Savosavo nouns may be cognate with the dual suffixes -l ∿ -al ∿ -ol of Lavukaleve nouns (and these may also be related to the segment la in Lavukaleve dual post-nominal particles).

Post-nominal particles also occur in Savosavo and Bilua with apparently similar syntactic functions. Post-nominal na of Savosavo does not agree in number or gender with the noun to which it relates, but it occurs with subject nouns and fully stressed personal pronouns:

añi na lali	*I killed him*
lo ñuba na ñei tu	*the baby is crying*
ñoñokeaga na pale tuvi la pevupevu keva tu	*mosquitos are flying around in the room*

Also in Savosavo are locative post-nominal particles ka (after feminine singular nouns) and la (after masculine singular nouns):

apoi vaka la no bo tai	*what boat will you go on?*
paleta ko voku ka no izi	*you will sleep in the back room*

Somewhat similar is Bilua post-nominal ta which occurs with subject nouns, and also with pronominal prefixes where it sometimes becomes da by morphophonemic rule:

ko ju ta sarosaroama	*the water is cold*
eñe ta ñeda ruaza ivereale	*we* p.e. *swim in the sea*
vo ḡole maba ta ota voula raisi	*the old man died last night*

2.13.2.3.2. *PERSONAL PRONOUNS*

In his comparison of Savosavo, Bilua, Baniata, and Lavukaleve, Greenberg (1971:816) stated "the most powerful indication of the unity of the Central Solomon group comes from the pronominal system". The similarities are even more pronounced when the additional data provided by recent field research are considered.

	Savosavo	Bilua		Baniata	Lavukaleve
s 1	añi	aña		e:i	ñai
s 2	no	ño		noe	inu
s 3 m	lo	vo		zo	hoina
s 3 f	ko	ko		vo	hoia
s 3 n.1				na	hoga
s 3 n.2				ñɔ	
d 1 e	age	eg̃e	m.	e:re	el
			f.	e:rebe	
d 1 i	mai	anig̃e	m.	be	mel
			f.	bebe	
d 2	pe	g̃e	m.	bere	imil
			f.	berebe	
d 3 m	to	niog̃a		zere	hoinal
d 3 f	to	niog̃a		robe	hoiaol
d 3 n				rede	hoigal
t 1 e			m.	e:benɔ	
			f.	e:benu	
t 1 i			m.	menɔ	
			f.	menu	
t 2			m.	mebenɔ	
			f.	mebenu	
t 3 m				nɔmɔ	
t 3 f				numɔ	
t 3 n				nafi	
p 1 e	ave	eñe		e:bɔ	e
p 1 i	mai	anime		memɔ	me
p 2	me	me		mebɔ	imi
p 3 m	ze(po)	se		mɔ	hoiva
p 3 f	ze(po)	se		mɔ	hoiva
p 3 n				nɔ	hoiva

The third person pronouns in Lavukaleve are demonstratives in structure with gender-number suffixes resembling the post-nominal particles, and in the other three languages the third person pronouns are for the most part identical to pre-nominal gender-number particles, but the third person plural pronouns, Savosavo ze or zepo and Bilua se are probable cognates. The first and second person pronouns are most suggestive of genetic relationships, although Lavukaleve duals and Baniata trials are related to the corresponding plurals and are therefore not revealing. There is some similarity in the first person singular series: Sa añi, Bi aña, Ba e:i, La ñai. The most persuasive evidence

is found in the second person singular and plural series: singular - Sa no, Bi ño, Ba noe, La inu; plural - Sa me, Bi me, Ba mebɔ, La imi. Inclusive first person plurals are somewhat similar to one another and also resemble the second person plurals with the characteristic consonant m: Sa mai, Bi anime, Ba memɔ, La me. Savosavo and Bilua first person exclusive forms are similar in overall structure, both VCV in form with only a consonant change differentiating dual from plural: Sa age d., ave p., Bi eḡe d., eñe p.

2.13.2.3.3. *PRONOMINAL SUBJECT AND POSSESSIVE AFFIXES - SAVOSAVO, BILUA, LAVUKALEVE*

Another set of pronominal forms occurs in Savosavo, Bilua, and Lavukaleve, again showing close similarities among the languages in spite of some differences in their syntactic function. In Savosavo these forms are secondary pronouns which do not carry primary stress, and are always preceded by another word or phrase, so they should perhaps be considered enclitics. The Bilua forms occur as subject markers with verbs and although usually written as separate words by my informant, they are considered here as prefixes because after certain of the morphemes there is a voicing rule by which a following p, t, k → b, d, ḡ. Lavukaleve forms indicate subject with verbs and the possessor with nouns, and are also presumed to be prefixes, although often written separately by native speakers, because certain nouns have a final vowel loss when possessed: mola *canoe*, memol *our canoe*. It should be noted that in some circumstances Lavukaleve subject-marking involves a nominal suffix or auxiliary (see below 2.13.2.3.5.) rather than a pronominal prefix. In the three languages these alternate pronominal morphemes have the form (C)V with only some first and third person forms in Bilua and Lavukaleve lacking a consonant. Where the prefix is the same for several gender-number categories the full personal pronoun is usually present as well. Similarities in form and meaning involve the same gender-number and person categories as in the independent personal pronouns.

	Savosavo	Bilua	Lavukaleve	
			Subject[4]	Possessive
s 1	ñe	a-	a-	ña-
s 2	no	ño-	ño-	ño-
s 3 m	lo	o-	o-	o-
s 3 f	go	ko-	o-	o-
s 3 n			*	o-

d l e	ge	ḡe-	*	le-
d l i	me	ḡe-	me-	me-
d 2	pe	ḡe-	*	mele-
d 3	te	ḡo-	*	lo-
p l e	ve	ñe-	e-	e-
p l i	me	me-	me-	me-
p 2	me	me-	me-	me-
p 3	ze	ke-	ma-	ma-

*Form not included in data analyzed.

All three languages show the same close correspondence in second person singular and plural forms that was observed in the independent personal pronouns, and the plural exclusive first person forms are identical. Bilua and Lavukaleve show an even closer relationship in the prefixes than in the independent personal pronouns, with identical subject forms in the first, second, and third masculine singular.

2.13.2.3.4. *PRONOMINAL OBJECT AFFIXES - SAVOSAVO, BILUA, BANIATA, LAVUKALEVE*

Savosavo and Bilua are particularly close in their systems of object-marking in verbs, both having only a small class of verbs that take object prefixes, the majority taking object suffixes. Baniata verbs have only suffixed pronominal object markers. Lavukaleve, on the other hand, has a more complex system involving object-markers of various types, apparently depending on tense, so that the object of a transitive verb will sometimes be indicated by a pronominal prefix and otherwise by a nominal suffix and/or auxiliary (see below 2.13.2.3.5.). There is a marked resemblance between these pronominal prefixes and the corresponding independent pronouns in Savosavo, Bilua, and Lavukaleve. In all four languages gender differences are expressed in the third person singular object affixes. Lavukaleve expresses gender differences in the third person dual prefixes, and Baniata differentiates neuter from masculine-feminine in all non-singular forms, but the neuter suffix does not reflect number distinctions, nor do first and second person suffixes.

	Savosavo		Bilua		Lavukaleve	Baniata
	Pfx	Sfx*	Pfx	Sfx	Pfx	Sfx**
s 1	ñ-	-ñi	l-	-l	ña-	-na
s 2	n-	-ni	ñ-	-ñ	ño-	-na
s 3 m	l-	-li	v-	-v	a-	-ra
s 3 f	k-	-gi	k-	-k	o-	-va
s 3 n					e-	-a

d 1 e	ñ-	-giñi	ǧel-	-ǧel	le-	-na
d 1 i	ñ-	-miñi	ǧel-	-ǧel	me-	-na
d 2	p-	-pi	ǧel-	-ǧel	mele-	-na
d 3 m	t-	-ti	k-	-k	la-	-ra
d 3 f	t-	-ti	k-	-k	lo-	-ra
d 3 n					le-	-a
p 1 e	ñ-	-viñi	ñel-	-ñel	e-	-na
p 1 i	ñ-	-miñi	mel-	-mel	me-	-na
p 2	m-	-mi	mel-	-mel	me-	-na
p 3 m	z-	-mi	m-	-m	vo-	-ma
p 3 f	z-	-mi	m-	-m	vo-	-ma
p 3 n					vo-	-a

*Savosavo has two other series of suffixes which differ only in the vowels, and which occur with only a few verb roots.

**Baniata forms are for present tense, as vowel changes occur with future suffixes.

In both Savosavo and Bilua object prefixes occur immediately before the verb stem. The subject prefix of Bilua (discussed above in 2.13.2.3.3.) precedes the object prefix: seta keñelai niurea *they laugh at us* (ke- *they* subject, ñel- *us* object). Some of the prefixing verbs in these two languages may be cognates, e.g. Sa lege *see him* (root ege), Bi alea *I see him* (root ea). A few verbs in Savosavo take both prefix and suffix, e.g. lovali *bite him* (root ova), lelesañili *destroy him* (root esañi with rare reduplication of prefix). Compounds occur in both Savosavo and Bilua, e.g. Sa lege lolomi *recognize him* (roots ege *see*, olomi *know*), Bi olai niania *he knows me* (roots ai niania *know*).

Like Bilua and Savosavo, Baniata has suffixed object markers. There is more ambiguity in Baniata however, with first and second person only distinguished from third, and singular and dual distinguished from trial and plural in third person only.

In Lavukaleve the object prefix precedes the subject prefix where both occur: ñai ñoatoire *I will help you* (ño- *you* object, a- *I* subject). Elsewhere, where the subject is not marked by a prefix, the object prefix immediately precedes the verb stem.

2.13.2.3.5. *SUBJECT-OBJECT SUFFIXES AND AUXILIARIES - LAVUKALEVE*

Lavukaleve, with predominant subject-object-verb word order, sometimes has subject- or object-marking suffixes with transitive verbs. The system differs from that of the other three languages, and from the pronominal prefixes of Lavukaleve itself in the absence of any person agreement.

	Lavukaleve
s m	-m
s f	-a
s n	ø
d m	-mal
d f	-aol
d n	-gel
p	-v

Although the subject of an intransitive verb is commonly indicated by a pronominal prefix, in certain circumstances the above suffixes are used instead:

tulava foiva suni irumeV	*all the children [THEY] are sleeping*
foina vulameM tahona	*HE is coming now*

In the following examples agreement of the suffix is with the object, and the verb has a subject prefix of the pronominal type:

inu ñolikiM	*you like HIM*
oina mel osiveMAL	*he will believe US* d.i.
oina oiva olikiV	*he likes THEM* p.

Lavukaleve verbs with gender-number suffixes are sometimes accompanied by an auxiliary (equivalent to English *be* apparently) which expresses person, number, and gender categories. The forms are as follows:

	Lavukaleve
s l	foñai
s 2	finu
s 3 m	fin
s 3 f	feo ∿ fio
s 3 n	fi
d l e	foel
e l i	fomel
d e	fimil
d 3 m	final ∿ finala
d 3 f	feol
d 3 n	figel
p l e	foe
p l i	fome
p 2	fimi
p 3	fiv

The verb suffixes and auxiliary agree with the object in the following examples with and without future suffix -re immediately following the verb stem, the subject being marked by a prefix:

oina otoireM FOÑAI	*he will help ME* m.
oina otoireM FINU	*he will help YOU* s.m.
inu ñotoireM FIN	*you will help HIM*
otua oleA FEO	*he saw his wife* [*HER*]

The verb suffixes and auxiliary agree with the subject in the following verb forms, all of which have a tense suffix -me just before the number-gender suffix, the object being marked by a prefix to the verb:

hoina ñai ñalikimeM FIN	*HE likes me*
inu aveameM FINU	*YOU knew him*

Auxiliaries are formed from a base f- or h- (meaning differences not yet fully determined) for affirmatives, and m- for interrogatives:

oina me otoireV FOME	*he will help US* p.
foel lelemal honala final olikiMAL HINALA, leta ñai alai e efoel finala hide	*he wanted those two pigs* [*THEM* d.], *but I told him they are ours*
nei ñavatun eraule, ñai okurureA MOÑAI	*if a coconut fell on my head, would it kill ME* f.?

Some auxiliary verbs appear to have an internal modification, probably a suffix, involving agreement with the subject or object under undetermined conditions. These suffixes are of a pronominal type, indicating person, and like the pronominal prefixes of Lavukaleve that indicate subject or possessor they show no distinction of gender, and a difference of number is found only between singular and non-singular. These suffixes also formally resemble the subject and possessive prefixes, but have l + V where the subject singular and plural prefixes begin with V:

	Lavukaleve
s l	-la
s 2	-ño
s 3	-lo
d l e	-le
d l i	-me
d 2	-me
d 3	-ma
p l e	-le
p l i	-me
p 2	-me
p 3	-ma

In the following examples agreement with the object is indicated by the first prefix on the main verb, the second prefix on that verb indicating the subject, while a suffix in a subsequent auxiliary form agrees with the object also:

ñai Oamakoge erau fiLOme	*I am throwing HER down*
oiva mel MEmamakoge erau fiMEme	*they are throwing US* d.i. *down*

In the next examples there is only an object prefix, the subject being indicated by a suffix in the auxiliary:

ñai ñosive fiLAme	*I'M following you*
oina esive fiLOme	*HE is following us* p.e.
oiva ñai ñasive fiMAme	*THEY are following us*

These pronominal suffixes are also recorded in other verb compounds. In the following examples the suffix is in agreement with the subject and there is no use of a prefix in apparently intransitive verbs:

solo ogen fi ñoaMAme	*THEY live at the bottom of the hill*
e otat fi ñoaLEme	*we* p.e. *live at the top*
ñai iruraine umalau fin aure hiLAme aunion	*I always eat kumara for dinner*
inu kariala vavar haiÑOme	*YOU speak slowly*

Duals evidently have a further suffix -l, according to the sparse data available:

el hoaka fi ñoaLEmeL	*WE* d.e. *live over there*
kakalel nala tail hoga ena fi ñoaLOmeL	*the two brothers* [*THEY* d.] *live in this house*

There is some similarity in function between these pronominal suffixes of Lavukaleve and the object-suffixes of Savosavo, Bilua, and Baniata. It is perhaps worth noting that due to the insertion of l before vowels in the Lavukaleve suffixes for singular first and third person and dual/plural first exclusive, there is a greater resemblance to the Savosavo third singular suffix -li, and to Bilua first singular suffix -l, but the l in Lavukaleve has a purely phonological function whereas in Savosavo and Bilua it serves to distinguish person and gender categories.

2.13.2.3.6. *OTHER CONCORD*

In languages of the Solomon Family there are a variety of examples of gender-number concord with substantives, some accompanied by pronominal categories of person, and others involving third person only.

2.13.2.3.6.1. Savosavo

In Savosavo there are two verbal auxiliaries that exhibit gender-number concord but do not denote person even where they agree with non-third person expressions.

	be	*have*
s m	sua	lava
s f	soma	lama
d	solo	lagelo
p	soga	lamega

The forms sua etc. occur with a preceding verb form and agree with the subject of that verb. These compounds occur in sentences that contain the predicative particle (or enclitic) e:

kiukaba lou somae?	*does she eat cucumber?*
to te ñolomi solo	*they* d. *know me*

The forms lava etc. occur in predicate constructions with a preceding nominal expression or verb with a -ga suffix, and agree with the subject of the sentence:

to te tuvi lagelo	*they* d. *have a house*
ko ñuba lamae no na?	*do you* s.f. *have a child?*
lo sisi sua sisigae kauña roño kinu lamega	*the red flowers smell good (have a good smell)*
eo, mataliga lama	*yes, she likes it very much*

The dual and plural forms lagelo and lamega respectively, appear to have double number indications, with -lo and -ga segments that correspond to the normal number suffixes of nouns added to stems which also vary with number. The stem lame occurs without a suffix in some sentences of the data:

zepoe kama lo dai vata aḡutugu lame mapaga	*they are hard-working people*

Where phrases involving these auxiliary verbs are found modifying nouns the singular-masculine form occurs in a kind of compounding construction, regardless of the number or gender of the accompanying noun, e.g. pevu sua miga *flying fish* p. In effect these constructions are of a nominal type, the auxiliaries reflecting noun categories of gender and number.

Also in Savosavo there are a few forms in which singular feminine is distinguished from singular masculine, and the singular masculine form is extended to duals and plurals. As in the singular auxiliaries the feminine is characterized by m. The possessive suffix or post-position is -ma (singular feminine), -va (singular masculine, dual, plural)

occurs with pronominal forms and agrees with the possessed noun which it precedes:

aima ñuba	*my daughter*
aiva ñuba	*my son*
aiva ñubaga	*my children* p.

A unique word toma (singular feminine), toa (singular masculine, dual, plural) occurs with adjectives dai *good* and ñari *little* in the formation of a quasi-substantive descriptive compound:

lavue dai toa kuro sagiligu lava	*ashes are good for scouring pots*
ñari toma adakie ko na	*she is a small girl*

The locative post-positions (or suffixes) of Savosavo appear to occur only with preceding singular nouns with which they agree. They have pronominal-type distinctive consonants, k for feminine, l for masculine:

ai ko molumolu ka	*on this island* f.
ai lo mañiga la	*in this village* m.

Narratives in Savosavo frequently introduce the character with a post-nominal demonstrative particle with pronominal-type consonant distinctions, limited however to third person categories: ka after feminine nouns, ta after duals, and za after plurals, with la after masculine. Examples of this usage are given below:

Majali Doma, Mapa Domae ta na	*this is about Devil Doma and Human Doma*
lo melo lova kapikapisie la na	*this is the story of that bonito*
kapisltutoneo koi Subegoe ka na	*this is about Subego* f.

Other forms with pronominal type gender-number distinctions that occur only in third-person forms are the demonstrative pronouns which are like the pre-nominal particles with lo extended to plurals:

	this	*that*		*these*	*those*
s m	ai lo	lo	d	ai to	to
s f	ai ko	ko	p	ai lo	lo

Where nouns and the third person pronoun zepo are followed by the enclitic predicative particle e, after other personal pronouns this particle forms separate words with prefixes agreeing with the preceding pronoun, e.g. añi ñe lo tada *I am a man*. The prefixed predicative particles are:

s 1	ñe
s 2	ne
s 3 m	le
s 3 f	ke
d 1 e	ge
d 1 i	me
d 2	pe
d 3	te
p 1 e	ve
p 1 i	me
p e	me

Savosavo concord is thus of two formal types. In the first there is indication of person, gender, and number as in personal pronouns, and here the characteristic of singular feminine is k. In the second there is indication of gender and number only, with a characteristic m in the singular feminine forms.

2.13.2.3.6.2. Bilua

In Bilua there is a verbal auxiliary based on the root sa- *have* that exhibits concord with the semantic subject. Suffixes to the root express the same distinctions of person, gender, and number as do the object affixes of Bilua (see above, 2.13.2.3.4.).

s 1	-lala
s 2	-laña
s 3 m	-la
s 3 f	-ma
d 1 e	-ḡela
d 1 i	-ḡela
d 2	-ḡela
d 3	-nioḡa
p 1 e	-ñela
p 1 i	-mela
p 2	-mela
p 3	-mu

The auxiliary is accompanied by a preceding noun phrase with which it forms a predicate, e.g. **aña ta puliama bolo salala** *I have no pigs*, **ene ta kala vuoluvuolu sañela** *we* p.e. *have a well*. This contrasts with the normal predicate word order of verb plus object noun phrase.

While the forms of these subject suffixes closely resemble those of the object affixes in the first and second persons, apart from the addition of la before the characteristic consonants in the singular suffixes, the forms of the third person suffixes show some interesting differences. The singular feminine suffix contains an m as do comparable forms in Savosavo, e.g. Sa soma *is* s.f., lama *has* s.f., -ma (s.f. possessive suffix). Moreover the singular masculine suffix of Bilua contains an l in contrast to the usual v, whereas in Savosavo comparable forms have v in place of the usual l, e.g. Bi sala, Sa lava *have* s.m., but Bi vo, Sa lo *he*.

Descriptive words in Bilua, occurring in predicate position, may occur with the full set of subject suffixes, as in the following examples:

ño ta tolialaña	*you* s. *are tall*
voa dole ta rosiala	*that snake is long*
eñe ta riteraiteañela	*we* p.e. *are busy*
se ta olaḡuamu	*they are poor*

Quantifiers may replace personal pronouns when occurring with the appropriate suffix, e.g. kuboñela *many of us* (compare kubo pade poso ta kota alazala *many of the houses were blown away*), vota otamela ñava kiadamela *he is afraid of all of us* (compare kiada keru *always*). More commonly these words modify and replace nouns as in the following examples, the attribute preceding the noun when it is present:

vota pui kiada keru inio ruḡeala rusu	*he isn't always a bad boy*
komi ta uriama sailao	*this is good food*
katila ko vairuama	*give me a clean one*

With plural nouns, i.e. with nouns accompanied by poso, a preceding attribute has the singular feminine suffix in all cases recorded, e.g. kiadama meḡora poso ta ruḡeamu kama taku poso *all children are bad sometimes*.

The articles kama *a* s.f. and kala *a* s.m. occur only with singular nouns which they modify and precede, and also exhibit the m-l contrast between feminine and masculine forms. Similar too are the interrogatives lama (s.f.), lala (s.m.), lainioḡa (d.), lave (p.) *what, who*, occurring in the following examples:

lama vakale nio ño ziovou	*what boat will you go on?*
lama ikio ko reko	*who is that woman?*
lainioḡa nio nioḡa rusu	*who are those two boys?*
lave inio nia maba poso	*who are these people?*

Also recorded agreeing with a following noun are the interrogatives noniama (s.f.), noniala (s.m.) *what kind of.*

The Bilua demonstratives also express gender and number categories, the distant demonstratives being based on the same phonological features as the prenominal particles, and the near demonstratives of a formation quite different in character. There is an a suffix on the pronouns when the noun to which they refer follows, but this is absent when the noun is deleted.

	this, these		*that, those*	
	with noun	no noun	with noun	no noun
s f	komia	komi	koa	ko
s m	nea	nei	voa	vo
d	ñiogia	ñiogi	nioḡa	nioḡa
p	nia	ni	sea	se

Other pronominal forms, probably relative pronouns (i)kio (s.f.), and (i)nio (s.m.), resemble the near demonstratives. They are recorded in utterances such as the following:

noniama reko kio ñoḡa zaria	*what kind of wife do you want?*
noniala maba nio opazovou vo salua	*what kind of person would hit a little child?*
lala inio vo Pita ma Jani	*is that Peter or Johnny?*
lama ikio ko	*who is she?*
vo inio kala maba baerebaere pide	*he is a man without friends*

There are many similarities between Bilua and Savosavo in the concord system. Both languages have auxiliaries and descriptive forms which agree with the subject. Although Bilua differs from Savosavo in expressing the category of person as well as gender and number, the third person forms are similar in structure with the m of the singular feminine forms a striking point of identity. The demonstratives in both languages are formally related to the pre-nominal particles, and in both languages feminine singular in these pronominal forms is characterized by the consonant k. These features and the object-marking system of transitive verbs provides the strongest evidence of a genetic relationship, and a relatively close one, between Bilua and Savosavo.

2.13.2.3.6.3. Baniata

In Baniata, descriptive words in predicate constructions with ne have a suffix which is absent when these words precede and modify nouns:

a:na miḡɔ mucona	*a hot day*
na mucona ne i:bɔ miḡɔna zavo na hinutara nebeona	*the day is hot but the evening is cool*

The suffixes agree with the subject. The forms occurring in the analyzed data are -zɔ (s.m.), -ma (s.f.), -na (s.n.), as illustrated above and in the following sentences:

zo noi ne hofuzɔ	*that snake is long*
e:vo i:na ne hofuma	*my mother is tall*
e:vo i:na ne fɔgɔma	*my mother is short*
zo noi ne fɔgɔzɔ	*that snake is short*

It is interesting to note that singular feminine (third person) is marked by the consonant m found in similar circumstances in both Savosavo and Bilua. The data at hand do not include examples with first and second person subjects so it is not clear whether the suffixes express person as well as gender and number. It should be noted that ordinarily these descriptive words occur in predicate constructions without ne, and in this case they have a fixed longer form which does not agree with the noun or pronoun to which it relates. This longer form is formed by the addition of -a, -ra, -fa, or, as in the following examples, -ta:

nɔ fiɔ miḡɔta	*the water is hot*
zo ui miḡɔta	*the sun is hot*
zo hofuta	*he is tall*
na e hofuta	*the path is long*
vo fɔgɔta	*she is short*

Other words marked by concord and exhibiting the m in singular feminine forms are the indefinite article and the near demonstratives, which are limited to the third person category:

	a, any	*this, these*	
s m	a:zo	ɗezo	ḡezo
s f	a:ma	demi	ḡemi
s n.1	a:na	dena	ḡena
s n.2	a:ñɔ	deñɔ	ḡeñɔ
p m	a:mɔ	demɔ	ḡemɔ
p f	a:mɔ	demɔ	ḡemɔ
p n	a:nɔ	denɔ	ḡenɔ

The demonstratives with the root ḡe- occur in genitive constructions and those with the root de- elsewhere, as in the following examples:

u:ɔ va ḡena	*whose house is this?*
ḡemi bukaha fiɔ miḡɔta ene vo nai naea	*the water in this stream is hot because of the volcano*
denɔ ti a:ñota fiɔ u:rɔra nɔ ibɔta i:tofa	*this tea is too hot to drink*

2.13.2.3.6.4. Lavukaleve

In Lavukaleve descriptive words in the predicate agree with the subject, and express categories of gender and number (the three genders being distinguished in both singular and dual, but not in plural forms). Agreement is indicated in suffixes which resemble the subject-object suffixes of verbs (see above 2.13.2.3.5.), with minor morphophonemic changes depending on the roots as illustrated in the following words:

	big	*bad*	*short*
s m	kuraim	sikalam	fafalokom
s f	kuraio	sikala	fafaloko
s n	kurai	sikala	fafaloko
d m	kuraimal	sikalamal	fafalokomal
d f	kuraiol	sikalaol	fafalokol
d n	kuraigel	sikalagel	fafalokogel
p	kuraiv	sikalav	fafalokov

In nominal phrases of Lavukaleve descriptive words follow the noun they modify, as do post-nominal particles, which is the reverse order to that found in Savosavo, Bilua, and Baniata. There is full concord between the noun and its modifier.

Numerals for *one* and *two* also change with gender, but higher numerals are always the same.

	one		*two*
m	telakom	roa	lelemal
f	tetalako	ro	lelaol
n	telako	roge	lelagel

The unit numerals based on the root ro- have a partitive meaning not found in those based on the root telako-, as illustrated in the following sentences:

manioko ho toro tuna ña ro la oneva	*this pawpaw is too ripe, give me the other one*

ñavovou roa tahona felakoen ñoalam leim fin	*one of my children no longer lives at home*
kanal o telakom filame	*I was twenty-one*

There are a number of demonstratives in Lavukaleve which consist of a root plus a gender-number suffix. The roots are fo-, ho- for near demonstratives, and foi-, hoi- for distant demonstratives. The f- forms appear to be the independent pronouns, and the h- forms the attributive pronouns occurring after the modified nouns, but the usage is not entirely clear. The suffixes are similar to the subject-object suffixes on verbs (see above 2.13.2.3.5.) but differ in the masculine and neuter forms:

s m	-na
s f	-a
s n	-ga
d m	-nal ∿ -nala
d f	-aol
d n	-gal ∿ -gala
p	-va

Third person personal pronouns (see above 2.13.2.3.2.) are identical in form to demonstratives with the root hoi-. Examples of demonstrative usage are given below:

fona ovovou nutam hin	*this is her fourth child* m.
foel lelemal honala olikimal hinala	*he wanted these two pigs*
mola ga foiga negore velame	*the canoe is floating away*
fofo mumute hoiga	*that heavy box*
houla hoia	*that tree*

Resemblances between the demonstrative gender-number suffixes and the forms of the auxiliary fin etc. (see above 2.13.2.3.5.) are marked.

Interrogative pronouns in Lavukaleve also express categories of gender-number, but there is more ambiguity in the forms, as shown in the following:

	who, what (is)?
s m	ami
s f	amia
s n	man
d m	amil
d f	amiaol
d n	manal
p	ami

The interrogative pronoun for location also is inflected to agree with nominals. The root is vasia-, and its variants are given in the following sentences:

vovou na vasiam	*where* s m *is the baby (male)?*
vovo la vasia	*where* s f *is the baby (female)?*
tail ga vasia	*where* s n *is the house?*
vovouol nala vasiamal	*where* d m *are the babies (male)?*
vovol la vasiaol	*where* d f *are the babies (female)?*
tailal gala vasiagel	*where* d n *are the houses?*
vovoukal va vasiav	*where* p *are the babies (male)?*
vovovera va vasiav	*where* p *are the babies (female)?*
tailav va vasiav	*where* p *are the houses?*

The system of gender-number concord in Lavukaleve is formally distinct from that of the other three languages, and is notable in the lack of any occurrence of m as a feminine marker, a feature which Greenberg (1971:852) has found in Papuan languages beyond the Solomons area. Instead m occurs as a masculine marker in some forms of Lavukaleve, and n in others - it might be speculated that the masculine-feminine consonants have been reversed in Lavukaleve. The resemblance between demonstrative suffixes and post-nominal particles in this language is directly comparable however to the close relationship between demonstratives and pre-nominal particles in the other three languages, and corresponds to differences of word order in nominal phrases.

2.13.2.4. BASIC VOCABULARY

2.13.2.4.1. *GENERAL REMARKS*

Rather few correspondences among all four languages can be found in the words listed below in 2.13.2.3.4.2. The word list of some 180 items was prepared by amalgamating word lists from Samarin (1967:221-23), Capell (1968:3-6), and Wurm (1969:64-72). Most striking among the lexical items are the following sets:

	Sa	Bi	Ba	La
name	nini	n̄i	nini	n̄i
sit	epi	papi	fofu	fifi
tree	kola	ore	ɔ:rɔ	houla

Some overall correspondences may be due to independent borrowings from adjacent Austronesian languages, or they may be reflexes of an Austronesian word in Proto-Solomon, e.g.

	Sa	Bi	Ba	La
breast	susu	susu		
pig	polo	bolo	bo	foe
turtle	voñu	voniu	gonu	gonu

Only a few phonetic correspondences occur in more than one set.

Savosavo has several close correspondences with Bilua:

	Sa	Bi
flower	sisi	sisusisu
path	keva	keve

Sa p = Bi b in

man	mapa	maba
pig	polo	bolo

Some forms may have undergone metathesis:

	Sa	Bi
drink	pizo	sapo
ear	tag̃alu	taliña
pudding	korikori	rikoriko

There are also close resemblances between Savosavo and Lavukaleve, e.g.

	Sa	La
star	simusimu	simu
banana	sou	sa
lie	pau	fufu
moon	kuge	kua
volcano	biti	biti

The closeness of the Russell Islands to Savo makes it likely that some of the resemblances are due to borrowing. Sa b = La v in the following:

blood	gabu	ravu
head	batu	vatu

Sa l = La Ø in

bonito	melo	meo
pig	polo	foe
sun	kuli	kui
tooth	nale	neo

There are similar relationships between Bilua and Lavukaleve, e.g.,

	Bi	La
heart	bulo	vuvul
shoulder	vakare	fakas
leaf	lekona	legis
tongue	lenio	let
and	ni	ne
arm	ñase	ñeñeso

Bi l = La Ø in

pig	bolo	feo
smoke	kolu	hou

There are few similar words in Savosavo and Baniata, and often these are apparently shared with one of the other languages:

	Sa	Bi	Ba
bamboo	veji		beisi
sleep	izi		isi-
water	piva		fiɔ
and	zu	tu	eta
feather	sivuga	zabu	zufu

Baniata and Bilua have several related forms not occurring in the other two languages:

	Bi	Ba
dog	siele	sie
eye	vilu	bero
rain	nioro	ɔrɔ
sea	ivere	fei

Lavukaleve and Baniata have very few individual correspondences:

	La	Ba
round	bokolea	buku

Further analysis of a larger amount of vocabulary will perhaps reveal more recurring sound correspondences. The data so far analyzed at least suggest that there are genetic relationships involved, but due to borrowing and perhaps a great time depth from the parent language there are few transparent cognates. The presence of many surrounding Austronesian languages complicates the picture, and mutual borrowing between Proto-Solomon and perhaps Proto-Eastern-Oceanic or later eastern Austronesian languages cannot be ruled out.

2.13.2.4.2. COMPARISON OF SOLOMON VOCABULARY (1973 Word List)

ENGLISH	SAVOSAVO	BILUA	BANIATA	LAVUKALEVE
all	dulo	kiad-ama	i:viri	suni
and	zu	tu	eta	or ne
arm	kakau m.	ñase f.	o:bi	ñeñeso f., tau
arrow	kukuati m.	teḡe	toko	borea
ashes	lavu m.	pari	bufɔ f.	kunu
back	potoɸoto m.	momo f.	hiri	mutu
bad	isaroño	ruḡe-ama	rivɔ(ta)	sikala
bamboo	veji m. *(hard, big)* molo m. *(big)* jejere m. *(thin)*	kevu	beisi f. *(big)* tusao f. *(thin)* vogeo m. *(thin)*	lava
banana	sou m.	naka f.	vahu-na n.1	sa
bark	korakora m.	tupu f.	zuɔ-na n.1	faota
belly	pika m.	siapa f.	rae	val
(betel) leaf	salu m.	musa	herɔfɔ-ñɔ n.2	kegu
(betel) lime	poke m.	lia f.	buru n.3	lari
betel nut	bekeni m. kosa m. *(wild)*	seḡala f.	heta f.	leo m.
big	ñai	matu-ma	tebo(ta)	kurai-m
bird	kosu m.	biañabiaña f.	mano-zo m.	malagul m.
bite	l-ova-li t. l-ou t. *(= eat)*	nanae-lou	a:ra-va	ña-ohoma
black	boraga	sibia-ma	i:ḡi(ta)	korovisa
blood	gabu m.	dara	vo	ravu

ENGLISH	SAVOSAVO	BILUA	BANIATA	LAVUKALEVE
bone	tovolo m.	piza f.	minu	sosokio
breadfruit	buzu m.	bare	meu n.2	ula
break	golo i. golo-li t.	pisai-la lo-pa-iva	uza-ra vaha-re	tataua i. hale *(= broken)*
breast	susu m.	susu f.	teɔ	ofu
burn	ora i.	baina	i:tofa	kelago i. akuire t.
butterfly	bebeula m/f.	luluku	fefere f.	felfel
call out	ñoñoza i.	nokae	ɔro-va	o-vei-va t. *(call to)*
cheek	labe	ari	bao	ñañav
child	ñuba, zuba m/f.	meǧora m/f.	ha nanu	vovou m/f.
cloud	muzi m. *(= night)*	lei	hohora m.	totoas
club	nalanala	kuba maja	kuba-ñɔ	kobau
coconut	tiliya m. *(immature)* pi m. *(green)* ǧazu m. *(copra)*	niru	hitefe f. *(growing)* bouz m. *(green)* hico-na n.1 *(ripe)*	nei n. ñolus *(green)*
cold	gaule	sarosaroro	beɔ(ta)	lomisa
come	ba	ku-a (∿ǧu-)	hofe-a	vulo-ma (∿vula-)
crab	kobi	risu	fihao:-na n.1	ra urio *(coconut)* kokovan *(hermit)*
crocodile	vua	esoro	seoto f.	katalea m.
crooked	ñeoza	kaido-ama (∿ǧ-)	roferofe(a)	keme
daughter	ñuba, zuba	meǧora	ha	ña-vovo
day	mañа	ñaniu	mucɔ-na	le

ENGLISH	SAVOSAVO	BILUA	BANIATA	LAVUKALEVE
die	ave i.	vou	u:za	kiu m.
dog	misu m/f.	siele	sie m/f.	mitakeu
drink	pizo i. pizo-li t.	sapo nozuta (?)	fioua	eui *(= eat)*
dry	viḡe i.	tabatabari-ama	gaɔso(ra)	kea-v
ear	taḡalu m.	taliña f.	oḡoto	hovul
earth	doi m.	midoku	fecu	aram
eat	samu i. l-ou t.	vuat-o i. o-ku-a t. (∿ḡ-)	u:a	eu-i, ou-ne
egg	kolei m. *(megapoč)* si m.	toruru f.	a:de-na n.l	keruv
eight	kui	siotolu	bihiɔ	sevi
evening	musaña m.	raisiraisi	timutara	aunio
eye	nito m.	vilu f.	bero	lemi
fat	duisa m.	kasi f.	haguru-cɔ	folufolu (adj.)
father	mau m.	mama m.	ai	mamam (familiar) kale-m
feather	sivuga m. *(= hair)*	zabu	zufu-na n.l	maruiv
fin		zavele *(fish)*	gima n.l *(fish)* iso m. *(shark)*	o-tan
finger	ririkina m.	seseu f.	ɔ:ci	soka
fire	keda m.	uza f.	hirɔ n.l	lake
fish	mi m.	niuniu	i:gana m.	fosal m.
five	ara	sike	sodu	sie
flesh	melomelo m.	marabau	fafo	leruv
flower	sisi	sisusisu	ɔ:zɔ	vivisa

ENGLISH	SAVOSAVO	BILUA	BANIATA	LAVUKALEVE
fly (v.)	pevu i.	akazo	a:ro-va	fofor
fog	lavo m. (?)	koulama	manege f.	makefu
food	samu m.	sailao f.	e:ma-cɔ n.3	ui n.
foot	nato m. *(= leg)*	kitl f.	oe	ña-fe
forehead	seǧeseǧe m.	kape f.	ae:te	ña-hai
four	agava	ariku	a:vo	nun
fruit	aigu m.	epa siusisuna	uve	homolo
full	sege i.	sukato-ama	siñi(a)	semem
give	lame-li	kati-la	teo	o-neva
good	dai toa	uri-ama	ni(ta)	hobea
grass	buruburu m.	seulele	herɔ m.	ara
green	gola kiba *(raw leaf)*	luǧumu-ama	hiu(ta)	girin
ground	doi m.	midoku	fecu n.1	aram
hair	sivuga m.	fou f.	zufu	nu
hand	kakau m. *(= arm)*	ñase f. *(= arm)*	ɔbi	tau
he	lo	vo	zo	hoina
head	batu m.	lezu f.	uɔ	vatu
hear	ene i. ene-li t.	vigo	ɔ:rɔ-na t.	vo-fi-mem
heart	kidopuruma	bulo	voǧovoǧo	vuvul
high tide	lua i.	ñodu	siñi n.1	mosil
hit	l-ali	pazov-o	tuma-na	kurun
hot	parapara	vuavualak-ama	miǧɔ(ta)	iaia
house	tuvi m.	pade	va	tail n.

ENGLISH	SAVOSAVO	BILUA	BANIATA	LAVUKALEVE
how	aketi (?)	noini-o	ɔ:nia	valai
how much	mai tei sua (?), alea	lateu	rerɔ *(how many)*	elav (?)
I	añi	aña	e:i	ñai
jaw, chin	ñoa	tana	zime	ña-fai
kin		maba	ia-mɔ	
knee	tuturiña m.	iḡe f.	i:dio	ña-kukunio
know	savu-li t.	ol-ai nania t.	ɔve-na	ña-vea-mem
leaf	kiba m.	lekona	e:vo-na n.l	legis
leg	nato m.	kiti f.	o:e	tau
lie	pau i.	teku i.	o:a	fufu-nu
liver	kalakala m.		o:e	ña-ha
long	sañava	rosi-ama	hofu(ta)	sosona
louse	dole m.	sipi	gutu	lai
low tide	karañɔ i.	mati	u:zefei n.l	fau
male	mapa m.	maba m.	finɔ-zo	leae-m m.
man	mapa m. tada m.	maba m.	finɔ-zo m.	ali m. leae-m m.
many	supu i.	kubo	raro	vutiv
moon	kuge f.	kaboso	i:di f.	kua
morning	ropo m.	vikale	ze e:ta	lalamuome
mosquito	ñoñokea m/f.	arasau	i:musu f.	mulukuita
mother	mama f.	nania f.	i:na	kala mama (familiar) vava
mountain	tetega m.	sopu	toa f. boro n.l *(hill)*	solo

ENGLISH	SAVOSAVO	BILUA	BANIATA	LAVUKALEVE
mouth	napu m.	suto f.	a: n.l	leu
name	nini m.	ñi f.	nini	ñi
neck	tua m.	ḡonaḡona f.	fiḡa	soso
net	gala m.	saru zapu vaḡora		ila
new	ige sua	vairu-ama	aroro-ta	koesove
night	muzi m.	ipu	hiu n.l	hamus
nine	kuava	siakava	bɔvɔhɔ	sava
nose	ñoko	ḡame	emɔ	sisi
not	goma	pui puli-ama	au sia	tamu
one	pa ela (counting)	omadeu	aro a-zo (= a) tufi (?)	dom tetelako telako
parrot		kara kiri	kara f.	makatoaem *(green)* marea *(red)*
path	keva m.	keve	e n.l	lake
person	mapa m.	maba	finɔ-zo m.	tam
pig	polo m. sidi m. *(piglet)*	bolo	bo m/f.	foe m.
put down	l-ovu t.	ivik-a	varifete-a	a-foari-va
rain	kuma m.	nioro	ɔrɔ n.l	lai
rat	kuzi m.	ruji (ruzi ?)	siro f.	kusukui
red	sisi	diri-ama	a:ro(a)	raravua
root	oñe	kataiḡili	aboso-na n.l *(tree)*	kala
rope	ropu m.	vuaro	fahi f.	kemus

ENGLISH	SAVOSAVO	BILUA	BANIATA	LAVUKALEVE
round	taligu i.	torutoru-ama	bukutu(ra)	bokole-a
run	rage i.	rere	tez-a i.	lio-nu
sand	nugunugu m.	karokoni	o:ne n.l	aor
say	tei i. savu-li t.	kiño-laevo	hau-a i.	otigiri-m
sea	ñañui m.	ivere	fei n.l	tasi
see	l-ege t.	v-ea t.	nodo-ra t. area	o-le-m
seed	aigu m.	sisu	uve f.	homolo
seven	pogora	sikeura	o:hlɔ	soa
shark	soge m.	baiza	rehu m.	feman
shoulder	lakelake m.	vakare	boe	ña-fakas
sit	epi i.	pap-i (∿b-)	fofu	fifi
six	pogoa	varimuja	tubi	oa
skin	korakora m.	topu f.	zuɔna	keut
sky	pada m.	au	u:zia n.l	totoasav
sleep	izi	maroñ-a	isi-a	iru
small	nari	silo-ama	isi(ta)	tula
smell	kinu eneli *(= hear smell)*	tuimi-ko (∿d-)	ei	vo-kini
smoke	azuazu i. azua-li t.	kolu	hia n.l	hou
snake	pepei m.	dole	noi m. *(big)*	tagio
son	ñuba, zuba m.	meg̃ora m.	ha	ña-vou
stand	alu i.	lojo	a:	fale
star	simusimu m.	suti	finofino m.	simu

ENGLISH	SAVOSAVO	BILUA	BANIATA	LAVUKALEVE
stone	kato m.	lado	heḡa m.	beko
string	gue m.	siakona	huḡi	totoña *(shell-money)*
sugar-cane	kemo m.	sisa	eu-n̄ɔ n.2	sera
sun	kuli m.	ñaniu	ui m.	kui
swim	puñe i.	ruaz-a	ri-a	su-ne
tail	kodo m.	sipuku	hifɔ-na n.1	fulu
take	l-au t.	koa-la (∿g-)	o:rɔ	vo-ma-va
taro	kake	mau	unɔ-n̄ɔ	suma
ten	atale	teni (toni?)	tɔ	kanoñam (others for specific objects)
that	lo m. ko f.	vo m. ko f.	zo m. vo f.	hoina m. hoia f. hoiga n.
they	to d.	nioḡa d.	zere d.m. robe d.f. rede d.n.	hoinal d.m. hoiaol d.f. hoigal d.n.
	ze(po) p.	se p.	mɔ p.m/f. nɔ p.n.	hoiva p.
this	ai lo m. ai ko f.	nea m. komia f.	dezo m. demi f.	hona m. ho f.
thou	no	n̄o	noe	inu
three	igiva	zouke	hie	eña
thunder	dulodulo i.	paka	u:zia m.	buhual
tie	pitipiti i. piti-li t.	lupika	nebi-vea	asu
tongue	lapi m.	lenio f.	a:ni	let
tooth	nale m.	taka f.	nane	neo

ENGLISH	SAVOSAVO	BILUA	BANIATA	LAVUKALEVE
tree	kola m.	ore	ɔ:rɔ-ñɔ n.2	houla f.
turtle	voñu m/f.	voniu	gonu f.	gonu
two	edo	omuḡa	e:ri	lemal, lelaol
valley	popo m.	loloku	ɔho m.	amala f.
village	maniga m.	peuru	ene-fi	felakoe *(= ship)*
walk	vanovano i.	talio (∿d-)	a:tia	foa
water	piva m.	ju f.	fiɔ n.3	lafi
we (exc.)	ave d.	eḡe d.	e:re d.m. e:rebe d.f.	el d.
	age p.	eñe p.	e:bɔ p.	e p.
we (inc.)	mai d/p.	aniḡe d.	be d.m. bebe d.f.	mel d.
		anime p.	memɔ p.	me p.
what?	apoi mai tei sua ɛke	noinio	ɔ:-nɔ	man vala roi, roin
white	sere	tapo-ama	tuga(va)	kelekelea
who?	ai	lalainio	u:ɔ:	ami
wind	guliguli m.	ururu f.	zu f.	naul n.
woman	adaki f.	reko	gohe	otua f.
yam	uvi m.	mari	boe-ñɔ n.2	uvi
yellow	posovata	vaḡo-ama	tama(va)	iala

2.13.2.5. THE SOLOMON LANGUAGE FAMILY

The grammatical and lexical evidence presented above supports a classification of Savosavo, Bilua, Baniata, and Lavukaleve as a language family. Subgrouping is not feasible at the present time, although inflectional systems suggest a closer connection between Savosavo and Bilua than between any other pair of languages, and comparison of basic vocabulary does not suggest any closer relations. The Savosavo-Bilua resemblances may however reflect common conservative tendencies rather than a closer genetic relationship.

There may be a genetic relationship between the Solomon languages and the Yele languages of Rossel Island, as suggested by Wurm (1972: 171) when he grouped them along with Wasi of New Britain as a stock within his East Papuan Phylum. Greenberg (1971:816-19) believes the closest relationship of the Solomon languages to be with the Reef-Santa Cruz family and groups them together as Central Melanesian, one of fourteen major groups which comprise Indo-Pacific. But speaking of the Rossel Island language he notes (1971:842) that there are "a few special resemblances to the Central Melanesian subgroup, particularly the characteristic second person plural pronoun mi, but the evidence does not seem conclusive for its assignment to this or any other subgroup."

The personal pronouns and pronominal prefixes of Yele cited by Ray (1937-9:378) show a number of interesting similarities to forms in the Solomon languages. The following forms are from the Olango dialect of Rossel Island:

	Independent Pronoun	Possessive Prefix
s 1	*n*nö	a-
s 2	*n*ni	nie-
s 3	omo	o-
p 1	*n*nu	nu-
p 2	*m*yö	mia-
p 3	mokn	yie-

A comparison of the independent pronouns of Yele with those of the four Solomon languages (see above 2.13.2.3.2.) reveals the following similarities:

	Ol	Sa	Bi	Ba	La
I	*n*nö	añi	aña		ñai
you s.	*n*ni	no	ño	noe	inu
you p.	*m*yö	me	me	mebɔ	imi
they p.	mokn			mɔ	

Possessive prefixes of Yele also show an interestingly close correspondence to some of the possessive and subject prefixes of Bilua and Lavukaleve (see above 2.13.2.3.3.):

	Ol	Bi	La
my	a-	a-	ña-
your s.	nie-	ño-	ño-
his	o-	o-	o-
your p.	mia-	me-	me-

In Yele there are subject-tense prefixes and object suffixes. The following forms are given by Capell (n.d.:12-3)

	Subject-Present Trans.	Intrans.	Object Direct
s 1	da-	na-	-na
s 2	tji-	nji-	-Ni, -ni
s 3	da-	a-	
d 1	de-	nja-	-nja, -njo
d 2	pu-	p-	-pu
d 3	da-	a-	-da
p 1	pu-	mɜ-	-ma, -mö
p 2	tja-	nj-	-njo
p 3	ja-	a-	

A comparison of these affixes with the prefixes and suffixes of the other Solomon languages (see above 2.13.2.3.4.) reveals few striking resemblances. Noteworthy is the similarity between the dual second and third person affixes of Savosavo and Yele, with characteristic consonants p, t in Savosavo corresponding to p, d in Yele. In Yele however there are less systematic correlations between consonants and person-number categories. There is apparently no classification by gender in the Yele language, which distinguishes it from the other four Solomon languages.

Like Lavukaleve and Savosavo, Yele nouns are suffixed for number (Henderson 1975:824):

	Lavukaleve	Savosavo	Yele
s	ø	ø	ø
d	-l etc.	-lo	-tə
p	-kal, -n, -v, etc.	-ga	-yo

Most of the other similarities of Yele to Solomon words involve Savosavo, and few of these are strong resemblances, except where there

are forms in two of the other Solomon languages. Yele words in the following sets are from Ray (1937-9:378, 383-4):

	Solomon Languages				Yele			
	Sa	Bi	Ba	La	Wamiu	Kwai	Olango	SW Rossel
blood	gabu			ravu	wua	uwa	wö	uwö
head	batu			vatu	mbada	*m*bara	*m*böda	*m*bara
man	mapa	maba			pi	*mm*a	*mm*ö	pi
sun	kuli			kui	kari	karu	iyĕla	karu
tooth	nale		nane	neo	nya	*n*yoa	*n*nyoa	*n*nyoiny
water	piva		fi		bwa	*m*bwa	*m*bwa	*m*buwa
arm	kakau				gö	gö	gö, kö	gö
bone	tovolo				gatu	döna	döna	döna
fire	keda				düa	*n*de	*n*dö	*n*dö
nose	noko				ngno	*n*no	*n*no	*n*no
village		peuru			pa	pa	*m*ber	pa

The field data presently analyzed shows many close similarities among Savosavo, Bilua, Baniata, and Lavukaleve, indicating that it is only necessary to posit one language family. Yele is tentatively included in the Solomon Language Family without prejudice to the internal classification of languages in the group. There are few systematic phonetic correspondences so that reconstruction cannot proceed at the present time. Further analysis of available data and future field research will provide extensive descriptive materials on the Solomon languages, and then more substantial comparative studies can follow.

NOTES

1. The research upon which this report is based was carried out in 1972-3 while I was on sabbatical leave from Trent University. The work was financed by a generous research grant from Trent University, a Leave Fellowship (W72-0426) from the Canada Council, and personal resources. It is impossible to acknowledge individually all those who assisted me in my field research, for wherever I stayed in the British Solomon Islands I received help and cooperation from many people. I am profoundly grateful to all those speakers of Savosavo, Bilua, Baniata, and Lavukaleve who told custom stories and translated English materials into their native language for me.

2. The quantity and quality of data obtained for the various languages will be briefly described.

Most of the time from November 1972 to July 1973 was spent in Davalaka on Savo, living with the family of Mary Claudette Vangere, who worked capably for the project as a full-time research assistant, interpreter, and informant. Texts and other materials were also collected and translated with the assistance of David Sade and Patteson Taño. Some fifty Savosavo speakers volunteered texts, all of which have been transcribed and translated. After preliminary study of the language had begun a basic eliciting schedule of some 1500 sentences and words was prepared to compare Savosavo with other Papuan languages. Only a portion of the collected material was analyzed in the field, but the data presented here are believed to be reasonably accurate and complete.

About a week was spent in the Russell Islands, mostly in the village of Marulaon working with several informants. A few texts were recorded as well as Lavukaleve translations of a few dozen English sentences. Subsequently, Henry Kava, a young Lavukaleve teacher working on Savo,

assisted in the transcription and translation of texts, and also wrote Lavukaleve translations for the basic eliciting schedule. Most of this data has yet to be analyzed.

The basic eliciting schedule was translated into Bilua by Milton Sibisopere, a high school teacher in Honiara, who recorded many of these sentences and also recorded, transcribed, and translated one text into Bilua. No field work was carried out in the Vella Lavella area, and analysis of the data is still in progress.

Baniata material was collected during two brief visits to Munda, totalling about seven days. The informant was John Kari, who had worked previously with Dr. Arthur Capell and Dr. Harold Scheffler. The transcription used was Mr. Kari's - the language is more phonologically complex than the other languages studied, and no claim to phonemic accuracy is made here. Only a portion of the basic eliciting schedule was completed, and of the two texts recorded only one was fully transcribed and translated. Notes on Baniata have been kindly made available by Dr. Scheffler, and these show essential correspondence with the materials I obtained, with some variation in the representation of vowels.

3. The following abbreviations are used in this paper:

prenasal.	prenasalized	n	neuter
vless	voiceless	p	plural
vcd	voiced	s	singular
trans	transitive	t	trial
intrans	intransitive		
d	dual	Ba	Baniata
e	exclusive *(he and I)*	Bi	Bilua
f	feminine	La	Lavukaleve
i	inclusive *(you and I)*	Ol	Olango
m	masculine	Sa	Savosavo

4. Lavukaleve subject prefixes undergo some morphophonemic variation when preceded by object prefixes:

s 1 a → Ø / s 3 m a ___ ñai Amakoge erau filome
I am throwing HIM down

s 2 ño → ne / s 1 ña ___ inu ÑANEtoire
YOU will help ME

s 3 o → Ø / s 2 ño ___ oina ÑOmakoge erau fiñome
HE is throwing YOU down

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P A R T 2.14.

SMALL PHYLIC GROUPS

Todd, E.M. "The Solomon Language Family". In Wurm, S.A. editor, *New Guinea area languages and language study, Vol. 1, Papuan languages and the New Guinea linguistic scene.*
C-38:805-848. Pacific Linguistics, The Australian National University, 1975. DOI:*10.15144/PL-C38.805*

2.14.1. SKO, KWOMTARI, AND LEFT MAY (ARAI) PHYLA

D.C. Laycock

2.14.1.1. SKO PHYLUM(-LEVEL STOCK)

2.14.1.1.1. *GENERAL REMARKS*

The Sko Phylum is a very small genetic grouping of the New Guinea area, consisting of only eight languages (on present knowledge; however, it seems unlikely that more members of the phylum will be found). Within the phylum, the languages are related at the stock level, which suggests a relatively short divergence time for the whole phylum; the phylum-level stock is divided into two families, with four languages in each. Two of the languages are in Irian Jaya, on the north coast of the island of New Guinea, just west of the Indonesian border, while the remaining six lie along the same coast to the eastward, in Papua New Guinea. Although some of the languages received some early attention, the grouping as a whole remained unknown till quite recently. The first statements on the group are those of Cowan, who first published (1952a) some grammatical notes on Sko, followed by a brief wordlist (1952b), and then (1953) a grouping of the languages Sko and Sangke (Saŋke) with the 'Tami' languages further inland, just west (for the most part) of the border. However, in 1957, Cowan, with further data, separated the Sko and Sangke languages from the Tami languages, on lexical and grammatical grounds; later work, especially that of Voorhoeve (1971), has shown that the Tami languages (which Cowan united as the 'North Papuan Phylum') are member languages of the Trans-New Guinea Phylum. Sko and Sangke remained therefore as virtual isolates, until Capell (1954) recognised the relationship between Vanimo, Wutung (which he writes Wutong), and Sko, although he makes the relationship a little too close:

> Vanimo and Wutong, the two varieties of speech found in the area, can be regarded with Sko as dialects of a single language. The three vary considerably in vocabulary, but structurally they are one.

Laycock, D.C. "Sko, Kwomtari, and Left May (Arai) Phyla". In Wurm, S.A. editor, *New Guinea area languages and language study, Vol. 1, Papuan languages and the New Guinea linguistic scene.* **C-38:849-858**. Pacific Linguistics, The Australian National University, 1975. DOI:*10.15144/PL-C38.849*

In the 1962 revision of the above work, he follows Cowan's earlier view in placing Sko and Sangke with the Tami languages, but continues to reprint the above statement of the relationship of Vanimo and Wutung to Sko; this would logically entail the inclusion of these languages also in the Tami group, but Capell nowhere says so explicitly.

Sko, Wutung and Vanimo were also equated in the only article on the ethnography of the region (Thomas 1942):

> The people of the village at Leitre appear to differ slightly in dialect from Manimo and Warimo, and there may be some slight change at Wutong and Seko, but the natives of the various villages converse freely with each other.

Thomas also recognises the relationship of Warapu to these languages, although once again the degree of relationship is considerably overstated:

> It would appear that about eighty to ninety years ago the headland where Vanimo station now is was occupied by the people of Warapu during the lifetime of the parents of some of the older men now living. Owing to the intrusion by a woman into the men's house, it is said, these people migrated, to avoid divine retribution for the sacrilege. The majority of the people moved about two days' journey to the east, and set up the village of Warapu on the Sissano lagoon. Owing to intermarriage with local villages, their dialect now differs considerably from the Vanimo coastal villages.

This story is unconfirmed by any other source. Even if true, it cannot have been Vanimo speakers who moved to Warapu; although detailed lexicostatistical counting has not been undertaken, Warapu cognates with Vanimo are unlikely to exceed 40%, and may be considerably lower.

Friederici (1912:258) recognised the relationship between Wutung and Sko, and correctly states that they are not dialects of a single language: '...sicherlich ist es [Wutung] eine andere Sprache, nicht etwa ein Dialekt derselben Sprache [Sko]'. He gives a list of canoe terms in Sko, Wutung, and Vanimo.

Ray (1919), drawing mainly on Friederici (1912, 1913), lists Warapu ('Varopu, Warupu'), 'Nori', 'Leitere', 'Wanimo', 'Waromo', 'Yako', Wutung, and 'Seko' as forming part of the 'Valman' group of languages; however, the other languages listed in the 'Valman' group are for the most part Torricelli Phylum languages (see 2.12.), the former village of Nori spoke Fas (Kwomtari Phylum; see below 2.14.1.2.) or Warapu (discussion in Laycock (1973:43)), the villages of Leitere (now a mission station), Vanimo, Warimo, and Yako speak Vanimo, and the two last languages are Wutung and Sko. The only data provided are the numerals and a few vocabulary items in 'Leitere', 'Wanimo', 'Yako', 'Wutung', and 'Varopu', and one word (pale, bare *pig*) in Sko; the source is apparently Friederici.

Further Sko data was published by Voorhoeve (1971), drawing on both his own data and that of Cowan (1952a, 1952b, 1957), as well as short

wordlists by Galis (1955) in Sko, Sangke, and other languages of Irian Jaya. The grammatical statement of Sko (for which Voorhoeve gives also the alternative name 'Tumawo') covers seven pages, and the wordlist contains some forty items; this remains the major data on any Sko Phylum language to date, although a somewhat longer wordlist (185 items) in the Warapu language is given by Laycock (1974). The same paper gives a map of Sko Phylum (and other) languages, and brief information on Warapu structure.

2.14.1.1.2. *COMPOSITION OF THE SKO PHYLUM-LEVEL STOCK*

Laycock (1973), on the basis of fieldwork in the West Sepik District, determined the apparently complete membership of the phylum-level stock as follows (population figures as of January 1970):

SKO PHYLUM-LEVEL STOCK		6,570+
Vanimo Family	2,355+	
Sko	350+	
Sangke	200+	
Wutung	410	
Vanimo	1,395	
Krisa Family	4,215	
Krisa	347	
Rawo	506	
Puari	371	
Warapu	2,991	

2.14.1.1.3. *STRUCTURAL FEATURES*

The phylum as a whole is characterised phonologically by the presence of some semantic tone and complex consonant clusters; however, these features are most evident in the western (Vanimo Family) languages, as Puari and Warapu are only marginally tonal, and Krisa and Rawo may have two tones only. (Sko appears to have three, and this is probably the case for Wutung and Vanimo also, although for these languages there is the possibility of an analysis that recognises vowel-gemination, with either of two tones occurring on each vowel.) All of the languages conjugate verbs by means of subject-prefixes, in the manner of Torricelli Phylum languages - and, as in the Torricelli Phylum languages, distinctions are made between singular, dual, and plural, and (in the western group at least) between masculine and feminine in third person pronouns. (Laycock (1968) suggested the possibility of a link between Sko Phylum and Torricelli Phylum languages, but this is now known to lack justification.) All the languages of the phylum show extensive lexical

borrowing from Trans-New Guinea Phylum languages (especially those of the neighbouring Border Stock) but do not resemble Trans-New Guinea Phylum languages in any other way.

Something of the complexity of a typical language of the Vanimo family can be illustrated by a few remarks on the Vanimo language itself. There remain unsolved problems at all levels, and the data presented here is tentative. The phonemes appear to be /a e i o u ö ü p t k b d g m n ñ ŋ v s h l y/; voiced stops are prenasalised, although the prenasalisation is often weak or absent, or manifested only in the nasalisation of a preceding vowel. Phones [ɣ] and [zʸ] occur, but the former appears to be an allophone of /g/ intervocalically, the latter an allophone of /y/ before /i/. All vowels may occur nasalised, but nasalisation is non-contrastive in some environments preceding nasal consonants (and prenasalised stops). The central vowels /ö/ and /ü/ are lax, and lower than their front or backed counterparts; they occur in fronted and backed allophones as well. Tone is phonemic, but is not marked in the examples which follow; vowel length is uncertain.

Sixteen different pronoun forms were recorded for Vanimo, but the majority of these are transparent compounds specifying the actors in a situation in great detail; these pronouns are ne *I*, mi *thou*, hei *he*, bei *she*, emi *thou and I*, ɛhei *he and I*, ɛbei *she and I*, blɛhei *thou and he*, blɛbei *thou and she*, dɛhei *they two* (m. or mixed), dɛbei *they two* (f.), ni *we*, ei *you (all)*, deho *they* (m.), debu *they* (f.), dei *they (mixed)*. The system is set out in Table I (where identity of row and column means a singular pronoun, non-identity the relevant combination).

TABLE I: VANIMO PRONOUNS

	I	*thou*	he_1	he_2	she_1	she_2	*he+he*	*she+she*
I	ne	emi	ɛhei		ɛbei		ni	
thou		mi	blɛhei		blɛbei		ei	
he_1			hei	dɛhei			deho	dei
she_1					bei	dɛbei	dei	debu

However, concordance in verbs recognises only seven forms: three persons, singular and non-singular numbers, and gender in third singular forms. The conjugation of verbs is complex, and no two verbs have been found which follow exactly the same paradigm; the differences are probably to be explained by different underlying verb stems. The complexities

are somewhat alleviated by the fact that the number of true verbs in the language seem limited, perhaps as few as twenty; other verbs are compounded from the basic verbs, so that *sleep* is *make sleeping*, and *talk* is *make talking* - a system familiar in other languages of New Guinea (e.g. Kalam - Pawley 1969). Verb stems are reduplicated in present tense, but the verb paradigms in Table II give the unreduplicated forms only. (The forms should be compared with those of Sko - Voorhoeve 1971.)

TABLE II: VANIMO VERB PARADIGMS

	Singular				Non-Singular		
	1	2	3m.	3f.	1	2	3
eat	ŋɛ	mɛ	hɛ	bɛ	nɛ	ɛ̃	dɛ
go	ŋa	ma	ha	va	na	ã	ya
come	lü	blü	lü	lü	dü	lü	lü
make	lɛ	blɛ	hlɛ	hvi	dɛ	lɛ	di
hear	lõ	mlõ	hlõ	tõ	nõ	lõ	sõ
hit(him)	ga	ba	hya	pa	*	ga	ta
hit(her)	la	mla	hla	na	na	la	ña
hit(them)	yi	si	hyi	si	ni	yi	si
sit	hve ŋo	pe mo	hve mo	pe mo	hve no	hve õ	hve mo
see	ŋũ hve	mũ pe	hũ hve	mũ pe	nũ hve	ũ hve	ñũ hve
stand	ŋũ lö	mũ blö	hũ to	wũ tɛ	nũ dö	ũ lö	ñũ tö

*not recorded

Data on other languages of the Sko Phylum is largely restricted to the unpublished wordlists obtained by Laycock in 1970-71, although a brief wordlist of Warapu appeared in the New Guinea Annual Reports for 1924-25, under the name of 'Nori', and an even briefer list had been given by Erdweg (1901).

2.14.1.2. KWOMTARI PHYLUM(-LEVEL STOCK)

An almost complete listing of the languages of the Kwomtari Phylum, together with the first use of the name, was given by Loving and Bass (1964). Laycock (1973) followed, essentially, the same sub-groupings, and was able to add the Pyu language, spoken just over the border of Irian Jaya on the Biake River. Laycock also established the area of the Fas language as extending well out of the Amanab Subdistrict, into the Aitape, Lumi and Vanimo Subdistricts. A further refinement on the mapping of the phylum was added by Conrad and Dye (1975), when an additional pocket

of Pyu speakers was found at Buriap village, on the Upper Sepik River (incorrectly listed in Laycock 1973 as Abau-speaking). The classification of this small phylum is then as follows:

KWOMTARI PHYLUM-LEVEL STOCK		3,246?
Kwomtari Family	2,421	
Kwomtari	824	
Fas	1,597	
Baibai Family	725	
Baibai	271	
Biaka	454	
Pyu Family	100?	
Pyu	100?	

Little is known about the languages of this phylum, almost the only data being survey wordlists collected by members of the Summer Institute of Linguistics, and by Laycock. Capell (1954, 1962) cites some Fas examples under the name 'Bembi'; but his other comments on 'Bembi' - that, for example, it has a bilabial trill - suggest that he is confusing the language with Pagi (Border Stock, Trans-New Guinea Phylum). The 'Nori' language, listed by Capell, is, on the basis of the wordlists in the New Guinea Annual Reports for 1924-25, Warapu-speaking; however, there is a village Onei, also known as Mori, in the same position as the 'Nori' shown on Capell's (1962) map, and this village is Fas-speaking. Perhaps the villagers are bilingual, or the village has changed its linguistic allegiance. A first wordlist of Pyu was given by Laycock (1972), and a more extensive list (about 110 items) is given by Conrad and Dye (1975).

The languages of the phylum are hard to characterise typologically. Fas, Kwomtari and Pyu appear to have no concordance in verbs with either subject or object, whereas subject is fully marked in the verbs of Baibai, and probably also of Biaka. Number systems tend to be binary, or 'body-parts'. Tense and aspect in verbs are shown by loosely attached particles. Number is distinguished in first person pronouns (singular, dual), but is not always apparent in the other pronouns. Lexically, the languages show a certain amount of influence from Trans-New Guinea Phylum languages; the question of whether the Kwomtari Phylum may in fact be a sub-phylum of the Trans-New Guinea Phylum remains open (see also 2.2.6.3. in this volume).

2.14.1.3. LEFT MAY PHYLUM(-LEVEL FAMILY)

The languages of the area between the Left May River and the Sepik River began to become known in the early 1960s, mainly from unpublished wordlists collected by R. Conrad, of the Summer Institute of Linguistics;

the name 'Left May Family' was first used by Healey (1964). Further wordlists were collected by a Sepik Expedition of the Museum für Völkerkunde, Basel, in the years 1965-67, and on the basis of both Summer Institute of Linguistics lists and Basel lists, as well as his own data, Laycock (1973) was able to publish a listing and preliminary classification of the phylum. Further information, with fairly extensive wordlists, has now become available (Conrad and Dye 1975); in this publication, the name 'Arai Family' is used. The listing of the languages below uses the older name for the phylum(-level family), but follows otherwise the Dye and Conrad language identification and population figures, with alternative names as given by Laycock (1973).

LEFT MAY PHYLUM-LEVEL FAMILY =		1,556+
= Arai (Left May) Family		1,556+
Rocky Peak (Yinibu)	275+	
Iteri (Yinibu)	90+	
Bo (Po)	175±	
Ama (Waniabu)	381	
Nimo (Nimo-Wasuai, Nakwi)	413	
Owiniga (Bero)	222	

Insufficient data is available on the typological features of the group, although Conrad and Dye give an outline of phonological features, as well as the cognate percentages within the phylum-level family, as well as wordlists. Conrad and Dye also mention that one language of the group, Rocky Peak, shares 8% cognates with Nomad (Samo and Kubo dialects) (Central and South New Guinea Stock, Trans-New Guinea Phylum, see 2.6.2.2.6.5.1. in this volume), and that other languages of the family share about 5% cognates with it; this is a potential wider relationship worth exploring (see 3.4.1. in this volume).

(For locations of all languages mentioned in this chapter 2.14.1., see the map of Sepik region languages in 2.11.1. in this volume.)

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2.14.2. INLAND GULF, ELEMA "PHYLA"

Karl J. Franklin

Most of the information from this section is from recent materials dealing with the Gulf District (Franklin, ed. 1973). However, we suggest here certain modifications for the more recent broad classifications.

Wurm (1972) outlines a general classification for the area (the Gulf District and adjacent portions of the Western, Southern Highlands, Chimbu, Eastern Highlands, Morobe, and Central Districts) about which we are concerned:

1. The Trans-New Guinea Phylum (McElhanon and Voorhoeve 1970), including:
   a. Central and South New Guinea Stock (Voorhoeve 1968);
   b. Gogodala-Suki Stock;
   c. Trans-Fly Stock;
   d. Turama-Kikorian Stock;
   e. Kutubuan Stock;
   f. East New Guinea Highlands Stock;
   g. Teberan stock-level Family;
   h. Pawaian stock-level Family;
   i. Angan Stock;
2. Minor Unrelated Phylic Groups
   j. Inland Gulf phylum-level Stock;
   k. Eleman phylum-level Family.

The above classification now needs reconsideration in several respects. First of all, if the relationships of the languages of (a) above are valid, we should also regard as relatively closely related to them those languages which are members of (d) Turama-Kikorian Stock; (e) Kutubuan Stock; (f) East New Guinea Highlands Stock; and (j) Inland Gulf Stock. However, one member of the Kutubuan Stock (Foe) has some affinity eastward

Franklin, K.J. "Inland Gulf, Elema "Phyla"". In Wurm, S.A. editor, *New Guinea area languages and language study, Vol. 1, Papuan languages and the New Guinea linguistic scene.* **C-38:859-866**. Pacific Linguistics, The Australian National University, 1975. DOI:*10.15144/PL-C38.859*

to (g) Teberan stock-level Family and (h) Pawaian stock-level Family, but another member of Kutubuan Stock (**Fasu**) has affinities westward to (a) Central and South New Guinea Stock, as well as northward to (f) East New Guinea Highlands Stock. As we have shown elsewhere (Franklin and Voorhoeve 1973) the position of the Kutubuan Stock is crucial to the whole classification.[1] I would propose now a separate stock called Trans-Murray (after the mountain and range in the area), consisting of the:

(1) East Kutubuan Family,
(2) Teberan Family, and the
(3) Pawaian Family.

The basis for suggesting that the East Kutubuan Family belongs to this group, rather than to some other individual stock as outlined above is along several lines: (a) cultural factors (see Williams 1940-41 on the **Foe** of East Kutubuan Family with comparative comments by Wagner 1970 on **Daribi**, of the Teberan Family); (b) lexicostatistical figures (established in particular between these three areas by MacDonald 1973); and (c) the position of **Fasu** within the Central and South New Guinea Stock, which despite its obvious proximity and relationship with **Foe** (Franklin and Voorhoeve 1973) has closer relationships elsewhere. Indeed in the light of these factors the position of **Foe** and **Fasu** within the same stock (as outlined in Franklin and Voorhoeve 1973) shows clearly that present linguistic classifications of Papuan languages includes a whole range of relationships.

The second stock that I would question to some extent as having a legitimate position within the Trans-New Guinea Phylum is that of (i), the Angan Stock. Evidence by Lloyd (1973) suggests clearly that the Angan Stock is not closely related to any of the language groups surrounding it. On lexicostatistical grounds involving these languages, the Angan Stock might not safely be considered a member of the Trans-New Guinea Phylum. However, Wurm (personal communication and 2.4.1.5.5.3. in this volume) draws attention to the fact that a sizable number of Angan lexical items tie in well with Trans-New Guinea Phylum cognate chains such as those established by McElhanon and Voorhoeve (1970), and points out that Angan pronouns, and some Angan structural features, are of a type widespread in Trans-New Guinea Phylum languages (see 2.7.4.1. and 2.5.3.3.1.). At the same time, Greenberg (1971) suggests that the Angan Stock may be remotely related to certain languages in Irian Jaya. This possibility is explored in Franklin (1973), but the evidence is very slight. If the relationship is valid, then the Angan Stock must represent a very old remnant of another widely scattered phylic group.

The further modifications in Wurm's (1972) classification can now be suggested: (1) the inclusion of (j) Inland Gulf Stock as a (sub-phylum-level) stock within the Trans-New Guinea Phylum, showing in particular a relationship with the Turama-Kikorian (sub-phylum-level) Stock, as well as the Central and South New Guinea Stock; (2) broadening the Eleman Family to include the Purari language and Tate, both formerly considered as isolates within the Gulf District (Brown 1973). This can now be called the Eleman-Purarian Stock. Added to this is the strong possibility that Eleman, i.e. the Eleman-Purarian Stock, may have a phylum-level relationship with the East New Guinea Highlands Stock and could be included in the Trans-New Guinea Phylum as a sub-phylic member (see 2.7.8.1. in this volume). The lexical evidence is slight, but oral tradition (as reported in Brown 1973) suggests that the Eleman people, or at least some groups of them, have migrated from the interior. The language which displays the closest set of pronouns with the Eleman-Purarian Stock is Tate (see the section on isolates) however, not Purari (or Koriki as it is also known). But the pronominal evidence is quite conflicting, in that, from pronominal evidence, Eleman also displays some relationships with the Turama-Kikorian Stock.[2]

Perhaps the answer must now await detailed comparative work. There are, of course, other kinds of comparisons and studies which can be applied to these areas, such as that of Dutton (1973). But Dutton's study of select vocabulary items shows in particular the difficulty in assessing the spread of cultural factors as depicted by the lexicon of any given area.

What is now needed is that Dutton's work be correlated with Wurm's plotting of spacial pronouns (see 2.3.3. in this volume). If both of these factors represent the migration of people, as the authors seem to suggest,[3] there should be some correlation in the linguistic groupings also suggested by the authors.

Some linguists have eliminated homophonous doublets or triplets from their lexical evidence. Far more revealing would be some indication of the geographical cum linguistic grouping of such forms. This is yet to be done on any wide or systematic basis.

For the time being then we must be content with allowing the distinction of the Eleman-Purari Stock, the Trans-Murray Stock, the Angan Stock, the Inland Gulf Stock, and the Turama-Kikorian Stock, all within (wholly or partially) the Gulf District. Whether all of these (except perhaps Eleman-Purari) belong to the Trans-New Guinea Phylum (as Wurm 1972 maintains for the languages of the second, third and fifth of these groups, and the author now suggests for the fourth and perhaps for the first (see

above)) can, in the author's opinion, perhaps not be quite positively concluded on a structural basis at this time.

Some notes on the Inland Gulf, and the Eleman-Purari (sub-phylum-level) Stocks have been given in 2.7.7. and 2.7.8. in this volume.

NOTES

1. Notice, for example that Voorhoeve (1968) included **Fasu** in his Central and South New Guinea Phylum, but that Wurm (1971) included **Foe** in an East New Guinea Highlands Phylum. This suggested two things: (1) the relationship of **Foe** and **Fasu** were inter-phylic and thus so remote to be of no concern, or (2) the two phyla were more closely related than the taxonomic labels suggest. The latter seems more likely now that Wurm has both the East New Guinea and Central South New Guinea groups as stocks within the new Trans-New Guinea Phylum (see 1.3.4., 2.7.2.1. and 2.5.3.3.2. in this volume).

2. Wurm (1972) in examining the personal pronouns in 450 Papuan languages found that there were basically three sets, two subsets, and one limited set. However, he points out that there is no obvious one-to-one correspondence between such pronominal sets and the established groupings of interrelated languages (see also 2.3.3. in this volume).

3. It is true, of course, that ideas, or even lexicon, can spread in certain directions without people moving uniquely in the same direction. A plotting of other related features such as kinship terms, homophonous forms such as *tree* and *fire* or *grass* and *feather* (see McElhanon 1971 and Laycock 1970 for other terms), temporal notions like *tomorrow* and *yesterday*, basic colours (Berlin and Kay 1969), counting systems, and other semantic domains will show us if there is any distinctly Papuan "world-view".

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2.14.3. EAST BIRD'S HEAD, GEELVINK BAY PHYLA

C.L. Voorhoeve

2.14.3.1. THE EAST BIRD'S HEAD PHYLUM-LEVEL STOCK

2.14.3.1.0. The East Bird's Head Stock extends over the whole eastern part of the Bird's Head except for a wedge-shaped area in the east occupied by the Borai-Hattam Family (see 2.10.2.4.) and a small area north of Manokwari in which an Austronesian language is spoken. The stock consists of the Meax Family and the Mantion family-level Isolate (see the Family Map in 2.6.2.1. in this volume). They share an average of 25% cognates. The total number of speakers of languages of the stock is about 16,000.

2.14.3.1.1. *THE MEAX FAMILY*

The family has two member languages: Meax in the north, and Meniŋgo in the Steenkool area in the south. They share about 65% cognates. The two languages are separated by a large tract of rough mountain country, and it is possible that other languages belonging to the family are spoken in this area. The total number of speakers is about 4,000.

Meax, in earlier publications called Mansibaber, became first known through a word list and some grammatical notes published by Wirz (1923). Cowan, in his 1953 survey, discussed Wirz' notes; a few vocabulary items in Meax can be found in his survey and in his later comparative work (1958, 1960). A short word list is given in Galis 1955.

For Meniŋgo the only data available is an unpublished word list.

Meax has free personal pronouns in 1st, 2nd, and 3rd person sg., dl. and pl. and an inclusive - exclusive distinction in the 1st p.dl. and pl. The Meniŋgo data looks incomplete and may contain errors; the pronouns in the two languages are presented in the chart below.

Voorhoeve, C.L. "East Bird's Head, Geelvink Bay Phyla". In Wurm, S.A. editor, *New Guinea area languages and language study, Vol. 1, Papuan languages and the New Guinea linguistic scene.* **C-38:867-880**. Pacific Linguistics, The Australian National University, 1975. DOI:*10.15144/PL-C38.867*

	1 p.		2 p.		3 p.	
	Meax	Men.	Meax	Men.	Meax	Men.
s.	didif	dedef	buba	bua	ofo	of
dl. incl.	maef	?	iga	?	koa	?
excl.	naef	?				
pl. incl.	memif	amofa				
excl.	memef	mofromra	iwa	mere-neteb	rura	bihire

The corresponding possessive pronouns in Meax are, according to Wirz:

	1	2	3
s.	dedin	bebin	efew
dl. incl.	mafman	yegen	kerken
excl.	nafan		
pl.	mafman	yein	rerin

and they follow the noun: mes dedin *my dog*. In Cowan's opinion this could be a special construction, involving an absolute possessive pronoun: *the dog is mine*. That this could indeed be the case is shown by the related Mantion language in which the possessive pronouns precede (or perhaps are prefixed to) the noun: tanin(-)sira *my hand*.

A notable feature of the Meax nouns in Wirz' list is that so many of them have an initial m. Many of these nouns are names of body parts, and Cowan advances the opinion that the m could be a possessive prefix parallelling the possessive prefix m- in Mantion. The new lexical data now available seem to confirm Cowan's opinion, witness the following nouns from different lists in Meax, Meniŋgo, and Mantion: *tooth* mufon, rufon, dufon, bufon (Meax), ifon (Meniŋgo); *skin* mofos, ofos (Meax); *breast* miŋk, riŋk (Meax); *foot* maki, aki, mukueda (Meax), mohora, abohora, mamohora (Mantion).

This should not lead one to assume that all initial m's in Meax nouns are prefixes, as was done by Greenberg (1971) - even if it allows one to postulate a few extra etyma (see 2.6.2.3.1.3.). There is no evidence to support this assumption.

Verbs in Meax take prefixed subject markers, a typological feature they have in common with the languages of the West Papuan Phylum. Wirz gives the following paradigm of the verb *to sleep*:

1 p.s.	t-axč	1 p.dl.	incl. m-axč excl. n-axč	1 p.pl.	m-axč
2 p.s.	b-axč	2 p.dl.	g-axč	2 p.pl.	y-axč
3 p.s.	axč	3 p.dl.	r-axč	3 p.pl.	r-axč

Tense and aspect are expressed by free markers, following the verb: didif ditmar fog *I shall eat*; buba bitmar oisovo *you have eaten*.

Word order in the sentence seems to be of the Austronesian type, and prepositions are used instead of postpositions: durk esič di βirfa *carry on the head* (durk *carry*, di *on*, βirfa *head*; the meaning of esič is unknown); didif teker Kwawi *I live at Kwawi*; ax mei *in the water*; skid mei *above the water*. The examples are from Wirz.

2.14.3.1.2. *THE MANTION FAMILY-LEVEL ISOLATE*

Mantion, from earlier publications also known as Manikion-Mantion or vice versa, occupies the south-eastern part of the Bird's Head, and has at least 12,000 speakers. There are two major dialects, a northern (Manikion) and a southern (Mantion). Cowan (1953) notes that Mantion and Manikion are names given by coastal settlers to the native population. Manikion is a Numfor word, Mantion a Wandamen word; both mean *indigene, native*.

Some notes on Mantion can be found in Cowan 1953; a few further lexical data in Galis 1955 and Cowan 1958, 1960. The present writer had at his disposal some unpublished notes on Manikion collected by A. Capell. At present the language is being studied by the Protestant Mission in the area. Mantion appears to be a tonal language.[1]

With the personal pronouns, three persons are distinguished in singular, dual and plural, with an inclusive-exclusive distinction in the 1st p.dl. and pl., as in Meax. They are given below for both dialects, but the Mantion data are incomplete.

	Manikion dialect	Mantion dialect
1 s.	tani	tani
dl.incl.	nanan	?
excl.	aman	?
pl.incl.	maman	mamani
excl.	emen	?
2 s.	pani	ban
dl.	yan	?
pl.	yeni	yeni
3 s.	eni	eni
dl.	lan	?
pl.	leni	reŋkaho

Possessive pronouns are prefixed to the noun; some examples: -sira *hand*, taninsira *my hand*, paninsira *your hand*, enmesira *his hand*, mamesira *our hands*.

Verbs take prefixed subject markers: tand-eye pan *I saw you*; pamb-eye tan *you saw me*; em-eya *we saw it*; le-čičuk *they returned*.

Word order in the verbal sentence is of the Austronesian type (SVO) and prepositions are used instead of postpositions:

le-na le-sa hose koji	*those men speared (a) big fish*
those-men they-speared fish big	
tand-eč tou pani	*I give it to you*
le-čičuk se Lei	*they returned to Lae*

2.14.3.1.3. *CLASSIFICATION*

The East Bird's Head Stock coincides with Cowan's 'Eastern Group' of the Bird's Head languages. This group he found difficult to place; at first he rejected the possibility that it belonged to his West Papuan Phylum (1958) but later he found evidence which pointed to a very distant relationship between the languages of the 'Eastern Group' and those of his West Papuan Phylum (1960) and he added the 'Eastern Group' to it.

The fate of Cowan's West Papuan Phylum (WPP) seems to be that it has to be split up over several phyla[2] although the grouping may retain an ultimate validity on the macro-phylum level.[3] Thus his 'Eastern Group' seems to constitute a phylum by itself; cognation percentages with the other languages in the Bird's Head fall generally below the phylum-level threshold and only between adjacent languages, where borrowing is most

likely to have occurred, do they exceed it. The following chart shows the numbers of cognates (in a 100 item basic word list) shared between Meax, Meniŋgo, Mantion, and the WPP languages in the Bird's Head (see 2.10.2.). The number of verbs found among the cognates is given between brackets.

	Meax		Meniŋgo		Mantion	
Borai	4	(-)	6	(2)	7	(-)
Hattam	8	(-)	6	(-)	7	(-)
Amberbaken	7	(2)	5	(2)	4	(2)
Karon Dori	6	(2)	6	(2)	4	(2)
Brat	7	(1)	7	(1)	5	(1)
Karon Pantai	4	(-)	3	(-)	3	(-)
Madik	5	(-)	5	(-)	3	(-)
Moraid	2	(-)	2	(-)	2	(-)
Moi	4	(1)	4	(1)	4	(1)
Seget	5	(1)	5	(1)	6	(1)
Kalabra	4	(1)	3	(1)	3	(1)
Tehit	5	(1)	4	(1)	5	(1)

The verbs are: *give, see* (with Borai); *come, eat* (with Amberbaken); *sit, eat* (with Karon Dori) and *eat* (the remainder).

The total number of separate cognates shared with languages of the West Papuan Phylum is thirty-three, but there is very little overlap between cognates shared with the languages of the Bird's Head Super-Stock, with Amberbaken, with Borai, and with Hattam.

2.14.3.2. THE GEELVINK BAY PHYLUM

2.14.3.2.0. The Geelvink Bay Phylum is a tentative grouping set up to accommodate a number of languages which have at least phylum-level relationships with each other and are difficult to include in any of the other three phyla in Irian Jaya, viz. the Trans-New Guinea Phylum, the West Papuan Phylum, and the East Bird's Head phylum-level Stock, (see chapters 2.5. - especially 2.5.3.3.2. -, 2.6., part 2.10., and 2.14.3.1. above).

The phylum stretches over a considerable part of the hinterland of the East Geelvink Bay - along the coast the Austronesian Waropen language is spoken - and also takes in the central part of Yapen Island. It

consists of the East Geelvink Bay stock-level Family and the Yava stock-level Isolate (see the Family Map in 2.6.2.1. in this volume). The total number of speakers in the phylum is not known, but may well be about 8,000.

2.14.3.2.1. *THE EAST GEELVINK BAY STOCK-LEVEL FAMILY*

The family as presently known consists of three member languages: Taruŋgare, Baropasi, and Bauri. Taruŋgare and Bauri share approximately 50% cognates, Taruŋgare and Baropasi 40% and Bauri and Baropasi about 35%. There is no earlier published information on these languages except for a short word list of Taruŋgare in Galis 1955; the present survey is based on unpublished word lists in Taruŋgare and Baropasi from Anceaux' notebooks[4] and on a list in Bauri kindly supplied to the writer by Myron Bromley.

Taruŋgare is spoken near the township of Nabire at the bottom of the Geelvink Bay; Baropasi is located about 200 km north-west of Nabire, and Bauri is spoken near Lake Holmes in the mountains south-east of Baropasi. The exact areas covered by them, and their numbers of speakers are not known, and it is possible that there are still other languages belonging to the same family in the same general area - the figure of 3,000 speakers or so may perhaps be not too far from the mark.

The verb forms in the lists reveal very little of the verb structure; some forms suggest the presence of a suffix, e.g. Taruŋgare **uaure**, Bauri **voü** *swim* (this **-re** is found in several verb forms in the Taruŋgare list). Bauri **emua** *give it to me* contains the verb stem **ua** *give* and the personal pronoun **em** *I* but it is not clear whether this is a pronominal prefix or a free pronoun.

The personal pronouns contained in the lists are:

	Taruŋgare	Bauri	Baropasi
1 p.s.	ei	em	emi
1 p.pl.	i	omti, emti	ime
2 p.s.	ei, oi	ʔome	oba
2 p.pl.	wi	-	umi
3 p.s.	dia (AN) oi	-	aba
3 p.pl.	ui	-	aiba

2.14.3.2.2. *THE YAVA STOCK-LEVEL ISOLATE*

The Yava language, locally also known as Yapanani or Mora, is spoken in the middle section of Yapen island; in the west and east it borders on Austronesian languages, which take up the remainder of the island. The most detailed published source on Yava is Anceaux' survey of, amongst others, the languages of Yapen (Anceaux 1961) in which he gives detailed information on the language area, dialects and the villages where they are spoken, and on the available sources, published and unpublished. To this he added some observations on the grammatical structure of the language, which supplement the few grammatical notes on Yava made by Cowan in his survey of 1953. A very short wordlist in Yava (called Turu) can be found in Galis' survey of 1955. The present classification of Yava was assisted by unpublished wordlists in several dialects of Yava, kindly made available to the writer by J.C. Anceaux. Yava is spoken by more than 4,500 people; there are 15 dialects, some of them spoken in one village only.

Pronouns: there are pronouns in the first, second, and third person singular and plural, with an additional inclusive-exclusive distinction in the 1st p.pl. and a masculine-feminine distinction in the 3rd p.s..

The following chart shows the pronoun sets in three Yava dialects: Ambaidiru in the mountainous interior, Mantembu just north of the township of Serui on the south coast, and Saweru, spoken on a small island about 10 km south-east of Serui.

	Ambaidiru	Mantembu	Saweru
I	ri, nei	rei, nei	nei
we incl.	uam	reiami, wamo	hamain, amain
excl.	uaiap	reia, reamo	
you s.	uein	uein	uein
you pl.	wea	wea	wea
he	wep	ue, wep, po	afi
she	wem	wem	ami
they	reame	awama	enawe

The gender distinction manifests itself also in nouns; these take suffixes which mark singular and plural number and within singular, also number and gender. Anceaux gives the following examples in the Saweru dialect: paitanepie *old man*; sapedaepie *bicycle*; a:nanemie *old woman*; kamenawie *men*; ruamenawie *women*.

Verbs, Anceaux notes, have a complicated conjugation, but he does not give any examples. A few can be found in Cowan, whose data are in the Mantembu dialect. Verbs take prefixes as well as suffixes; the prefixes found in the examples are subject markers and markers of the gender of the object; the function of the suffixes is not clear. In some examples, however, the verb has no subject marker but the subject is indicated by a free pronoun.

Examples: -aje *go down*: ris-aje *I am going down*, wis-aje *you* s. *are going down*, wep-aje *he is going down*, but:

po oramane ra-mago *he stone it-threw = he threw the stone.*
batan kawasae w-ayau-be *people many they-talk-... = many people were talking.*

The gender distinction already found in pronouns and nouns manifests itself also in the third person singular of the verb. Anceaux gives the example: de *he comes*, more *she comes*.

The word order in a verbal sentence is Papuan: subject-object-verb, as can be seen in the above examples.

2.14.3.2.3. *CLASSIFICATION*

The present position of Yava as a member of the Geelvink Bay Phylum is not without problems. In earlier publications, the relationships between Yava and the languages in the Bird's Head received all the attention. Cowan (1955) suggested that Yava could be related to the Bird's Head languages; Anceaux later voiced the same opinion (1961) at about the same time that Cowan added the language to his West Papuan Phylum (1960). Cowan's evidence however was weak, and some of his equations now appear untenable.[5]

The newly available lexical data reveal an interesting situation. Yava has phylum-level relationships with a few languages in both the Trans-New Guinea Phylum (TNGP) and the West Papuan Phylum (WPP). These are, in the TNGP the Demta, Tanah Merah, and Sentani languages of the Sentani Stock, and the Kwerba language of the Dani Stock (see 2.6.2.2.14. and 2.6.2.2.8.1.) and in the West Papuan phylum the Amberbaken, Borai, and Hattam languages (see 2.10.2.3. and 2.10.2.4.). The remainder of the lexical relationships between Yava and languages of the two phyla seem to fall below the phylum level. With the almost total absence of structural information on the languages in question (the only exception being Sentani) it is difficult to assess the weight of the lexical evidence; the sporadic cases of phylum-level relationships with languages of the TGNP and WPP seem in themselves not enough to posit either TGNP or WPP membership for Yava, nor to unite

the two phyla into one. The bulk of the lexical evidence does not support any of these solutions. For this reason, Yava has been united into a separate phylum with the languages of the East Geelvink Bay Family. These at least, in addition to having phylum-level relationships with Yava, share with it the characteristic of not belonging clearly to either the TGNP or the WPP.

The lexical correspondences between Yava and one or more of its phylum-level partners on the mainland are given below[6]; to these have been added the correspondences between these languages which do not involve Yava. They show a number of quite close correspondences between Kwerba and Hattam, but this is a lead which can only be followed up when more is known of the languages in north Irian Jaya.

The lexical correspondences are between Amberbaken (AMB), Borai (BOR), Hattam (HAT), Yava (YAV), Taruŋgare (TAR), Kwerba (KWE), Demta (DEM), and Sentani (SEN). The Yava data are in the Mantembu dialect, except where indicated otherwise: a = Ambaidiru, c = Ariepi, e = Tarau, k = Turu, l = Konti-Unai, m = Wadapi-Darat, o = Saweru.[7]

A. Correspondences involving Yava.

belly - BOR nəpur, YAV nanebon, DEM nimbu
breast - HAT ik-dob, YAV uka
burn - HAT nenjeŋ, YAV - (a: nen; e: monindi; k: ninigyo)
come - YAV nde, re; TAR nere
eat - YAV rai(s), TAR ghayo
eye - AMB yam, YAV (n)ami
fly (v) - AMB bubwar, BOR pra, YAV bariri, TAR bunana, DEM fru
foot - YAV najo, TAR nal (Baropasi: naro)
give - BOR eri, YAV -ra, TAR nore
green - YAV keke, DEM keker
hair - AMB bur, YAV bwin
I - AMB in, BOR, HAT dani; YAV nei, rei; TAR ei, KWE ema, DEM də, SEN dəyə
leaf - AMB bwa, YAV ba, bau
lie down - YAV -naki, -neki; KWE nukuam, ndokwain
long - BOR wai, kwar; YAV waiawan (a: gwarawain)
long - HAT nə-jei, YAV c: sojai
louse - AMB iim, BOR emem, HAT mem, YAV eme, DEM ami, SEN mi
man - YAV aña, KWE ana
meat - YAV - (e.k,l: sine), KWE tiŋ

mouth - YAV awa, KWE mawe, SEN wa
sit - YAV tunu (o: nunu), SEN nuə-
skin - BOR, HAT ŋkek; YAV kea
small - YAV mamau, KWE mamo-čera
stand - HAT ahyen, sayen; YAV seontet (m: neseyente, k: nasiate)
star - AMB tom, HAT simura, YAV tum, KWE KWE čimuta, čumuta
sun - YAV uma, DEM omar
tail - YAV ateva, TAR otapara
tree - YAV ño, SEN no
two - BOR nyan, HAT čan, YAV jiru, KWE nini-čaro, nini-čiro
warm - YAV mamoan, DEM namu, SEN naume
water - AMB war, HAT ŋwar, YAV karu *(moisture)*, TAR waro
wind - YAV obar, TAR bwa
you s. - YAV uein, TAR ei, DEM we, SEN weye
you pl. - YAV wea, TAR wi, DEM me, we; SEN meya

B. Correspondences not involving Yava.

blood - AMB far, DEM owar
drink - AMB a kuret, TAR ugure
dry - AMB kalle, DEM kekere (Kwesten, Tor Fam. has karkara)
he - BOR ne, HAT no, SENT nəyə
housefly - BOR ŋwaram, KWE akunam, agworem
knee - BOR abrau, TAR para
near - HAT dədew, DEM yotow
nose - BOR muhab, HAT uhwab, KWE okwə
red - BOR nuŋwar, HAT nŋwoi, DEM nuŋgu
sun - HAT mpau, TAR wapao
three - HAT nəŋal, DEM nauŋwai
tooth - HAT kway, KWE kwan
tree - HAT incem, KWE ičə
what - BOR ame, SEN eme
white - BOR pow, TAR pau, SEN paumbwan

NOTES

1. Personal communication by Dr. Myron Bromley.

2. Lexicostatistically defined as groups of genetically related languages sharing a minimum of between 6-12% cognates in a basic word list of 100 items. (see 2.6.2.1. note 2).

3. See 2.6.2.3., 2.10.2.1. and 2.14.3.2.

4. See 2.6.2.1. for further details.

5. Cowan gives three correspondences with Moi (Waipu dialect), this being the highest number of cognates found by him between any of the Bird's Head languages and Yava. One of these, *leaf* Mantembu bara: Moi malas is invalid; Anceaux' Yava lists all have ba or bau and the corresponding morpheme in Moi (and other languages of the West Bird's Head Family) is -las which is not cognate with ba(u). The equation of Mantembu -amo (in wamo, reamo) with Brat amo *we* is tenuous, and Cowan's conclusion that the characteristic consonant of the 1st person plural in Mantembu is m constitutes an error in the light of the new data.

6. To economize on the size of the list, four languages have not been included. They are Baropasi and Bauri of the East Geelvink Bay Stock-level Family, and Tanah Merah and Nafri of the Sentani Family in the Sentani Stock. The relationships between Yava and the languages of these families are made sufficiently clear by the inclusion of only one of their members, viz. Tarunggare and Sentani.

7. For the locations of these dialects the reader is referred to the map in Anceaux 1961.

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P A R T 2.15.

ISOLATES

2.15.1. ISOLATES: SEPIK REGION

D.C. Laycock

2.15.1.1. INTRODUCTORY REMARKS

The Sepik region - by which we understand here an area extending from just west of the border of Irian Jaya to just east of the division between the East Sepik and Madang Districts, bounded in the north by the sea-coast, and in the south by the Highlands foothills - has more than its share of isolates and small phylic groups. The reasons for this are not immediately apparent; the speakers of these languages do not live in particularly inaccessible or difficult terrain, although it is only in recent years that contact has been made with them; far more inaccessible areas in the Central Highlands of Papua New Guinea have populations which speak languages which are clearly relatable to the surrounding linguistic stocks. One theory is that the Sepik region has been one of considerable population movement, and that the populations speaking the linguistic isolates represent remnants of populations that have been absorbed everywhere but in the little pockets surrounding the great migration routes (see 3.4.1. in this volume); another possibility is that the isolates represent refugee populations.

Whatever the reason, the Sepik isolates present a linguistic and migration problem. It is true, of course, that the languages are classified as 'isolates' (or rather, are 'unclassified') because information on them tends to be scanty; further research may establish that these languages have in fact quite clear relationships with linguistic groups elsewhere on the island of New Guinea. But the isolates have, in most cases, been carefully compared with representative languages of all major groups in a radius of about a hundred miles, and with each other, and to date show no traits which would allow them to be included in larger groupings. A listing of them, with numbers of speakers is accordingly

Laycock, D.C. "Isolates: Sepik Region". In Wurm, S.A. editor, *New Guinea area languages and language study, Vol. 1, Papuan languages and the New Guinea linguistic scene.* **C-38:881-886**. Pacific Linguistics, The Australian National University, 1975. DOI:*10.15144/PL-C38.881*

given here, followed by discussions of each language, with such data as is available (following and updating Laycock (1973)). The listing runs approximately west to east. Further details and discussion may be found in Laycock (1973), and locations on the map of Sepik region languages in 2.11.1. in this volume.

SEPIK REGION ISOLATES (with alternative names)

Yuri	740+		
Busa	307	Busan	
Nagatman	496	Nagatiman	
Amto	230	Ki	
Musian	75	Musan	
Erem	?		
Pinai	100?	Pinaye, Wapi	see note at end of 2.15.1.
Wiyaw	1000	Wiyavik, Wiabuk, Wuiabuk	
Aramaue	300+	Aramo	

Of these, Amto and Musian are now believed to be interrelated (see below 2.15.1.2.4. and 2.15.1.2.5.) and to form a small phylum(-level stock) (see 1.3.4. in this volume). Also, Pinai, Wiyaw and Aramaue are now believed to be fairly closely interrelated (see below 2.15.1.2.7.-9.) and to form a family, the Piawi (stock-level) Family, within the Yuat Super-Stock in the Ramu Sub-Phylum of the Sepik-Ramu Phylum (see 2.11.3.5.1. in this volume).

2.15.1.2. NOTES ON THE INDIVIDUAL LANGUAGES

2.15.1.2.1. *YURI*

Yuri is spoken in seven villages near the Irian Jaya border, just north of Green River. It is characterised by a lack of gender and morphological marking in nouns, three numbers, and suffixation of subject-markers in verbs. Counting is by a body-parts system terminating at 23. Words tend to be short, and the language may be tonal; in these and other respects it resembles languages of the Ok Family (Trans-New Guinea Phylum), but the lexicon shows no resemblance. The suggestion is made (in Laycock 1973) that it may turn out to be related to Oksapmin, which shows similar typological features, and was until recently counted as an isolate. (Oksapmin has now been tentatively included in the Trans-New Guinea Phylum.) No basic data have been published on the language, although Laycock and the Summer Institute of Linguistics have unpublished survey lists; the language is mentioned by Loving and Bass (1964), and by Laycock (1965, 1973).

2.15.1.2.2. *BUSA (BUSAN)*

Busa was first mentioned by Loving and Bass (1964), who classed it as a member of a 'Busa Phylum' containing only one other member, Amto (not 'Nagatman', as erroneously stated in Laycock 1973). However, Busa shares only about 8% cognates with Amto, so that this relationship, without any other supporting evidence, must remain doubtful. More recently, Conrad and Dye (1975) found only 4% cognates between Busa and Amto, and conclude 'from this data a Busa phylum seems unlikely'. No higher percentages with other languages of the area have been found.

From Laycock's 1971 fieldnotes, Busa shows the following features: no morphological plural marking in nouns, no dual forms in pronouns; subject-marking by prefix in verbs, object marking by suffix; verb morphology, and perhaps pronouns, distinguish a third singular feminine subject; nasal vowels occur, and tone may also be present. The numerals obtained appear to be fully decimal, but this is so unlikely a feature in the interior of New Guinea that it may be preferable to regard this as a recording error (perhaps the first ten numerals of a body-parts system). The typological features of Busa suggest Torricelli Phylum languages, but lexical agreement with Torricelli Phylum languages seems absent.

2.15.1.2.3. *NAGATMAN (NAGATIMAN)*

Nagatman is also first mentioned by Loving and Bass (1964), as an isolate; some material was also collected by Laycock in 1971, and a short wordlist can also be found in Conrad and Dye (1975). The language has some nasal vowels, and marks subject concordance by suffixes unrelated to the free pronoun forms; there is no gender, no dual, and no morphological marking of plural in nouns. Numeration is quinary.

2.15.1.2.4. *AMTO (KI)*

As has already been mentioned above in 2.15.1.2.2. Amto was first placed by Loving and Bass (1964) into a 'Busa Phylum', containing only Busa and Amto, with 8% cognates; however, this figure of 8% is reduced to 4% by Conrad and Dye (1975), when obvious loans are excluded, so that it seems that a 'Busa Phylum' must, on present evidence, be rejected. However, Conrad and Dye found 29% of 'probable cognates' with Musian, which seems to establish a genetic connection; wordlists in Amto and Musian collected by David Bailey, the missionary at Green River, support this conclusion. Conrad and Dye further report that Amto and Musian average 7% of shared vocabulary with Arai (Left May) (see 2.14.1.3.)

languages, but they feel that this reflects borrowing. (Laycock (1973) cites Bailey as mentioning widespread bilingualism in the Left May area: Amto and Bo (Po) speakers understand simple Abau, while many Bo speakers know Amto, and Rocky Peak (Yinibu) speakers know Bo.) No data is available on typological features.

2.15.1.2.5. *MUSIAN (MUSAN)*

First cited by Laycock (1973), on the basis of wordlists collected by David Bailey (missionary at Green River), and now apparently established by Conrad and Dye (1975) to be related to Amto. (See above 2.15.1.2.4. for further details.) Bailey's lists show a third singular feminine in pronouns, but the data yield little else in the way of structural information. Laycock's (1973) comment that Musian may ultimately be classifiable into the Arai (Left May) Family would seem, in the light of the work of Conrad and Dye (see above 2.15.1.2.4.), to be unsupported.

2.15.1.2.6. *EREM*

A village named Erem is shown on some official maps as an uncensused village on the Upper Yuat River. It is certain that whatever language is spoken there is not the same as any of the known languages of the Yuat River, and the distance between the location of this village and the villages of other known languages make it unlikely that the language spoken at Erem is any really 'known' language of the area, although it is possible that Erem is a northern village of the Pinai language (see below 2.15.1.2.7.). It is included with Pinai on the map of Sepik region languages in 2.11.1. in this volume.

2.15.1.2.7. *PINAI (PINAYE, WAPI)*

Speakers of Pinai are located on the northern side of the Upper Yuat gorge; they are bilingual in Enga (hence the inappropriate name 'Wapi', which is correctly applied to a dialect of Enga). All that is known of their language is a wordlist of some 250 items taken by Rev. L.A. Cupit in 1970 or 1971; as these words showed little or no resemblance to any other known language of the area, Pinai was listed as an isolate by Laycock (1973). However, comparison of the Pinai list with a shorter list of Aramaue (Aramo) (see below 2.15.1.2.9.) shows clear lexical relationship, even perhaps to the extent of suggesting that Pinai and Aramaue might be dialects of a single language. A lesser resemblance to Wiyaw (see below 2.15.1.2.9.) suggests that a reclassification of these three isolates is in order, although the data is still so slight that any such reclassification can only be very tentative.

2.15.1.2.8. *WIYAW (WIYAVIK, WIABUK, WUIABUK)*

Wiyaw is spoken in the Sanggapi valley, in the Schrader Ranges, northwest of the Kaironk valley; data consists of a brief unpublished wordlist collected by Andrew Pawley in 1967, and an even briefer list by P.J. Kraehenbuhl (Simbai Patrol Report 5 of 1973/74). Laycock (1973) comments: 'Shows some resemblance to the languages of the Ramu Super-Stock, and is perhaps to be included with them'. This impression is confirmed by Kraehenbuhl's new list available since the publication of Laycock 1973; Wiyaw shows, especially, resemblance to a number of the languages on the Yuat River (members of the Mongol-Langam and Yuat Families of the Sepik-Ramu Phylum) - without, however, showing particularly close relationship to any one of them. Wiyaw shows approximate family relationship to Aramaue, and similar resemblance (though slightly less) to Pinai.

2.15.1.2.9. *ARAMAUE (ARAMO)*

First documented in a brief wordlist by P.J. Kraehenbuhl (Simbai Patrol Report 5 of 1973/74), Aramaue shows close resemblance to Pinai, and a lesser but discernible resemblance to Wiyaw; its speakers (originally given as approximately 83, but now estimated at between 300 and 400) inhabit an area east of the Wiyaw speakers, at a point (approximately) where the boundaries of the East Sepik, Madang, and Western Highlands Districts meet.

The total data on the last three languages suggests that they are no longer to be regarded as isolates, but can form a single family within the Sepik-Ramu Phylum (because of the apparent relationship to Yuat languages). The details of just where they might fit is discussed in the chapter on the Sepik-Ramu Phylum (see 2.11.3.5.1.).

2.15.1.3. CONCLUDING REMARKS

One fact emerges from the above account of the isolates in the Sepik region: of nine isolates (or 'unclassified languages') listed for the Sepik area in Laycock 1973, and further discussed in this paper, two (Amto and Musian) have now been shown to be related to each other (though no further relationships have been found), and three more (Pinai, Wiyaw, and Aramaue) are seen to be related to each other, and to probably form part of the second largest genetic grouping of languages in the New Guinea area (the Sepik-Ramu Phylum). This leaves only four true 'isolates' - and on one of these there are no data whatsoever, and it may conceivably be identical with Pinai (see above 2.15.1.2.6.). This pattern is likely to continue: gradual relating of the isolates both to each other, and to larger established genetic groupings. Whether all the isolates will eventually 'disappear' in this way is problematical.

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LOVING, RICHARD E. and JACK BASS

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Laycock, D.C. "Isolates: Sepik Region". In Wurm, S.A. editor, *New Guinea area languages and language study, Vol. 1, Papuan languages and the New Guinea linguistic scene.* **C-38:881-886**. Pacific Linguistics, The Australian National University, 1975. DOI:*10.15144/PL-C38.881*

2.15.2. ISOLATES: IRIAN JAYA

C.L. Voorhoeve

2.15.2.1. INTRODUCTION

Among the known languages of Irian Jaya there are now only two languages left whose affiliation is not yet clear: Warenbori and Taurap (Borumeso). Five other languages which earlier had been regarded as isolates, viz. Morwap, Molof, Usku, Tofamna, and Kaure (Voorhoeve 1971) have since been included in the Trans-New Guinea Phylum (see 2.6.2.2.16.-17. and 2.5.3.3.2. in this volume).

2.15.2.2. WARENBORI

Warenbori is spoken in two or three villages in the delta of the Mamberamo River. The number of speakers is not known but is unlikely to exceed a few hundred. The only published source of information on Warenbori is Galis' survey of 1955, which contains one noun and ten numerals in Warenbori, and shows its location on the map. The present writer used an unpublished wordlist put at his disposal by J.C. Anceaux (see 2.6.2.1. in this volume).

Warenbori shares about 10% cognates with its western neighbour Baropasi of the East Geelvink Bay stock-level Family of the Geelvink Bay Phylum (see 2.14.3.2.1.), but neither with the other members of this family nor with any other language do its cognation percentages reach the phylum level. It is likely that the 10% shared with Baropasi reflects a borrowing relationship. The pronouns in Warenbori are:

	1	2	3
Sing.	iwi	awi	amagai
Plur.	iwiamia (incl.) amimagai (excl.)	banuburemi	bainteme

Voorhoeve, C.L. "Isolates: Irian Jaya". In Wurm, S.A. editor, *New Guinea area languages and language study, Vol. 1, Papuan languages and the New Guinea linguistic scene.* **C-38:887-890**. Pacific Linguistics, The Australian National University, 1975. DOI:*10.15144/PL-C38.887*

They show similarities to the pronouns in Yava (2nd person singular, 1st person plural inclusive), Tarungare (2nd person singular) and Baropasi (3rd person singular) of the Geelvink Bay Phylum (see 2.14.3.2.), but no systematic correspondences.

Nearly all the nouns in the Warenbori list end in -ro or -ndo; possibly these are suffixes or clitics of unknown function, or perhaps allomorphs of one suffix or clitic. Some examples: *louse* kiro, *fish* antaro, *tree* awuro, *belly* kewararo; *meat* mindo, *ear* erarando; and *hand* keberaro (with prefix k- and suffix -ro?) besides *nail* ebera-tirbindo.

Some nouns seem to be compound nouns with a second constituent boro, or baro possibly referring to a round object: *bone* kekom-boro; *breast* tutu-boro, *knee* kepibʷaro, *egg* manindo-baro (*bird:* maniro), *eye* i-baro. Probable cognates are found through the whole Trans-New Guinea Phylum, often as second constituent of compounds: Suki ti-bodu, Kiwai ke-puru *head*; Kampong Baru (South Bird's Head Family) i-mago *eye*, Kaeti kiri-mogo *eye*, and in the Finisterre-Huon group of languages: Nankina buun *round*, Selepet puru *cluster of fruit* (McElhanon and Voorhoeve 1970) are some of the examples. In these cases -ro does not seem to be a suffix. The morpheme i as first constituent in *eye* has also etyma in many Trans-New Guinea Phylum languages, see for instance the Kampong Baru form mentioned above. One may therefore expect that eventually Warenbori will turn out to belong to the Trans-New Guinea Phylum.

2.15.2.3. TAURAP (OR BORUMESO)

Taurap is spoken south-west of the Mamberamo River, south of Pioniersbivak. In the south it borders on the Bauri language of the Geelvink Bay Phylum near Lake Holmes (see 2.14.3.2.1.); in the north and west, on the opposite side of the Mamberamo, its neighbour is Kwerba (see 2.6.2.2.8.1.). It is not known how far the Taurap area extends towards the coast. Taurap is the language of the Monao, or Borumeso, tribe and until recently was known as Borumeso. The number of its speakers is not known.

An early wordlist in Taurap (Borumeso) was published anonymously in *Anthropos* 8 (1913); the present writer also had at his disposal one Taurap list from Anceaux' collection (see 2.6.2.1. in this volume) and a list recently collected by Myron Bromley. These lists contain some correspondences with languages of the East Bird's Head Phylum (2.14.3.1.), especially with Mantion, the Geelvink Bay Phylum (2.14.3.2.), and the Trans-New Guinea Phylum, especially with Kwerba, Kaure, and Dani, but their number is too low to tie Taurap firmly in with any of the three phyla.

Nothing is known of the grammatical structure of Taurap. The word-lists do not contain any clearly recognizable affixes except perhaps an adjective ending -koŕa, -sora, or -hoŕa : hũnkora *black*, ɓékoŕa *good*, kaisoŕa *red*, namkʃhora *round*. Only four pronouns have been recorded; those in the 1st and 2nd person singular are similar to the corresponding forms in Mantion:

	1	2	3
Sing.	dawo (Mantion: dani)	ɓawo (Mantion: bani)	juane
Plur.	ɓoro	-	-

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2.15.3. ISOLATES: GULF DISTRICT

Karl J. Franklin

There are several languages which were considered linguistic isolates in the light of a recent survey of the Gulf District (Franklin, ed. 1973), although two of them do not lie strictly within the district.[1] The two so-called isolates which are considered in this section are **Porome** and **Tate**, or **Raepa-Tati** as Brown (1973) calls the latter language.

2.15.3.1. POROME

Porome and **Kibiri** are two closely related dialects of a language spoken near Kikori town in the Goaribari Census Division. The villages in the area which speak the dialects are Ero (**Porome** dialect of 600 speakers), Babaguina, Doibo, Paile, Tipeowa, and Veiru (all of the **Kibiri** dialect).

The only lexical relationship established between **Porome** and another language (**Purari**) is slight. **Purari**, also called **koriki** or **Namau**, is spoken in the Purari delta area by over 6,000 people. On the basis of the Swadesh wordlist **Porome-Purari** displayed an 8% lexical relationship, while for Eleman or Kiwaian languages the relationship is always 3% or less. There is little grammatical information on **Porome**, but the free pronominal forms show their closest cognates as follows:

	POROME	MORIGI	IPIKO	TATE	KAIRI
1st singular	amo	mo	wo		
2nd singular	do	lo		aro	
3rd singular	da				a

Franklin, K.J. "Isolates: Gulf District". In Wurm, S.A. editor, *New Guinea area languages and language study, Vol. 1, Papuan languages and the New Guinea linguistic scene.* **C-38:891-896**. Pacific Linguistics, The Australian National University, 1975. DOI:*10.15144/PL-C38.891*

	POROME	MORIGI	GOGODALA	KALULI
1st dual	amokai	nimotoi		
1st plural	amǫ	nemo		
2nd plural	a			
3rd plural	abǫ		emo	tąbo

The languages indicated above are of the following linguistic groups (all of the Trans-New Guinea Phylum): **Morigi** (Kiwaian Family, Trans-Fly (sub-phylum-level) Stock), **Ipiko** (Inland Gulf Sub-Phylum), **Tate** (see below), **Kairi** (Turama-Kikorian Sub-Phylum), **Gogodala** (Suki-Gogodala Stock), and **Kaluli** (Bosavian Family, Central and South New Guinea Stock). In other words the linguistic groups are so diverse that the few pronominal relationships are non-conclusive. For the present **Porome** remains a linguistic isolate.

2.15.3.2. TATE

The language we have called **Tate** is referred to as **Raepa-Tati** (*Hill Tati*) in Brown (1973). Further evidence by Brown suggests conclusively that **Tate** is on a stock-level relationship with the Eleman Family.[2]

Brown (1973:312) has compared all languages and dialects of Eleman with each other and with **Koriki** and **Tate**. Eleman lexicostatistical percentages are never lower than 15% with **Tate** and some languages show as high as a 21% relationship. Some of the 75 cognates that Brown found in comparing 400 Eleman-**Tate** words are now listed.

Example of Tate-Eleman Cognates

English Gloss	Tate	Eleman
2,3 dual	a'ura	auka (T)
belly	here	ere (T)
body hair	pupura	lupu (K)
breast	ame	ame
toe	fera eke	mora eveveka (K)
lips	anara poe	ape poe (T and S)
urine	mine	mi (T)
brains	aropure	haropuru (T)
veins, sinew	enena	elele (T)
river	mai	mai
island	finu	firu (T)
sweet potato	hawani	kauari (T)

English Gloss	Tate	Eleman
yam	mapori	mapore (O)
many	himiri	siviri (K)
louse	saruta	saruta (T)
rotten	pulula	purula (S)
shark	ainyari	aitari (O)
taboo	safu	safu (T)
person, man	aru	karu (T)
mother	noura	lou (T)

According to legends, the Tate people came from the Nara (Austronesian language north-east) area (Brown 1956, 1972). There is no evidence of this from a linguistic point of view. There is also little linguistic affinity between Eleman and language groups to the east (Brown 1973).

However, on the basis of the relationship of Tate and Eleman, there is no longer evidence to consider Tate as a linguistic isolate.

N O T E S

1. In chapter 10 of Franklin, ed. 1973, Dutton (p. 511) lists **Porome, Pawaian, Purari, Tate, Waia,** and **Wiru,** as isolates. Some of these were so listed by Dutton because the complete study of the Gulf District had apparently not yet been seen by him. We can clarify the issue by suggesting now that **Pawaia** is a single member of a family on a stock-level (or super-stock-level, see 2.7.5.1. and 2.2.6.8. in this volume) relationship with the Teberan Family, and that **Purari** and **Wiru** hold the same type of stock-level relationships with the Eleman and West Central Families, respectively. Wurm (1973) considers **Waia** to be a member of the Pahoturi River Family of the Trans-Fly Stock (Wurm 1971). This leaves only **Porome** and **Tate** as potential isolates in the Gulf District. (**Waia** is in the Western District and **Wiru** is in the Southern Highlands District.)

2. I am indebted to H.A. Brown for the lexical comparison of **Tate** and **Eleman** and also for the cognates listed. The abbreviations in the table are **(T)oaripi, (O)rokolo, (S)epoe** and **(K)aipi.** O is in the Western Eleman group; the other three are in the Eastern Eleman.

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2.15.4. ISOLATES: MOROBE DISTRICT: WASEMBO (OR GUSAP)

K.A. McElhanon

2.15.4.1. INTRODUCTION

The Wasembo language (476 speakers) is spoken in five villages of the Markham Headwaters Census Division, Kaiapit Subdistrict, Morobe District. These villages are Gusap (population 48), Hinggia (101), Yankowan (135), Rampa (101), and Maraboi (91) and they are located east of the Gusap aerodrome between the Gusap and Umi Rivers at altitudes between 3,000 and 5,000 feet.

The data upon which this study is based were elicited through the use of the Kâte language as the lingua franca and are regarded as having a high degree of reliability. Research in the Wasembo language was supported in part by the Papua New Guinea Research Fund of the Summer Institute of Linguistics. A vocabulary list of 313 words may be obtained from the writer.

The grammatical and morphological data support the classification of this language as non-Austronesian. The usual tagmeme order locates the Predicate Tagmeme final in the clause. Other clause level tagmemes are easily identified by the occurrence of enclitics which are diagnostic for particular tagmemes.

2.15.4.2. NOTES ON GRAMMAR

2.15.4.2.1. *BASIC VERB FORMS*

There is a distinction between sentence-medial and sentence-final forms of the verb. The sentence medial form -mu indicates the same actor (homopersonal) as that of the following verb. The forms indicating a different actor (heteropersonal) from that of the following verb make seven distinctions of person and number and these forms are given in

McElhanon, K. "Isolates: Morobe District: Wasembo (or Gusap)". In Wurm, S.A. editor, *New Guinea area languages and language study, Vol. 1, Papuan languages and the New Guinea linguistic scene.* **C-38:897-904**. Pacific Linguistics, The Australian National University, 1975. DOI:*10.15144/PL-C38.897*

Matrix I. Note that these seven distinctions of person and number are typical of the languages currently asserted to belong to the Trans-New Guinea Phylum.

Matrix I: Heteropersonal verbal suffixes

	Singular	Dual	Plural
1st person	-pa	-pua	-puna
2nd person	-mana	-pia	-pina
3rd person	-ne	-pia	-pina

There do not appear to be any sentence-medial suffixes indicating a distinction between simultaneous or antecedent action in relation to the action of the following verb.

Verb paradigms were elicited for past tense, present tense, present tense habituative mode, future tense, and the imperative mode. No separate contrary-to-fact forms were elicited; rather this category appears to be expressed by past or future tense forms with syntactic markers. Past tense habituative mode could not be satisfactorily elicited. The fact that the Kâte past tense habituative forms were not understood probably indicates that an equivalent category does not exist in the Wasembo language.

Matrix II: Past tense verbal suffixes

	Singular	Dual	Plural
1st person	-pakae	-puakae	-punakae
2nd person	-manakae	-plakae	-pinakae
3rd person	-nekae	-piakae	-pinakae

Note that the past tense suffixes are the same as the heteropersonal verbal suffixes plus the form kae. Further study is necessary to determine the significance of this similarity.

Matrix III: Present tense verbal suffixes

	Singular	Dual	Plural
1st person	-ra	-rou	-pu
2nd person	-ma	-rei	-pi
3rd person	-re	-rei	-pi

The forms of Matrix III were elicited with the verb root o- *to hold it*. When the verb root {ire-} ire- ∿ ira- ∿ i- *to eat* was elicited with present tense suffixes the resulting forms were those of Matrix IV.

Matrix IV: Present tense forms of *to eat*

	Singular	Dual	Plural
1st person	ire-ra	i-reu	ire-pu
2nd person	ira-ma	i-rei	ire-pi
3rd person	ire-re	i-rei	ire-pi

In general there appears to be a significant amount of verb root/stem variation. Until a study of Wasembo morphophonemics has been completed, the identification of morpheme boundaries and suffixes must be regarded as tentative.

Matrix V: Future tense verbal suffixes

	Singular	Dual	Plural
1st person	-kara	-kohu	-kopu
2nd person	-kanu	-keku	-kepi
3rd person	-komu	-keku	-kepi

The suffixes in Matrix V were elicited with the verb root e- *to hold it*. When occurring with -ire *to eat* the initial k is replaced by t.

Matrix VI: Present tense habituative suffixes

	Singular	Dual	Plural
1st person	-makera	-makereu	-makepu
2nd person	-makema	-makerei	-makepi
3rd person	-makere	-makerei	-makepi

A common feature of the Finisterre-Huon group of languages is that the habituative mode morphemes are related to a verb root meaning *to stay* or *to live* and are possibly derived from a proto-form involving a compound with this verb. The three hundred vocabulary items included in this study, however, do not include a verb root which could be identified with the posited 'habituative mode' suffix -make.

Matrix VII: Imperative suffixes

	Singular	Dual	Plural
1st person	-o/-wɔ	-kohu	-kopu
2nd person	-Ø	-ki	-ni
3rd person	-komu	-ki	-ni

Note in Matrix VII that the 3rd person singular, 1st person dual, and 1st person plural forms are the same as the corresponding future tense suffixes in Matrix V. These forms must be regarded with suspicion until they are confirmed by further study.

2.15.4.2.2. *OBJECT MARKING AFFIXES*

The limited data of this study do not allow for definitive statements on the status of the object-marking affixes. If one posits verb roots consisting of zero morphemes, then the affixes may be regarded as suffixes which directly follow the verb root/stem. These would be followed by a verb periphery consisting of mode, tense, and subject-marking suffixes. Alternatively one may posit both prefixes and suffixes without the supposed occurrence of zero morphemes as verb roots.

The benefactive forms were not obtained so nothing can be said regarding the possible occurrence of benefactive suffixes on the verb. No prefixes were observed in the verb morphology.

Some forms of the object-markers (particularly the dual and plural forms) are similar in phonological shape to the free personal pronouns (Matrix XII). There appear to be two allomorphic subclasses of the object-markers with apparently minor morphophonemic variants. One subclass is typified by the object-markers occurring with positive zero morphemes as verb roots for *to hit* and *to give*.

Matrix VIII: Object-markers with Ø- *to hit*

	Singular	Dual	Plural
1st person	ya-	hiya-	hita-
2nd person	na-	nia-	neka-
3rd person	a-	nua-	noka-

Matrix IX: Object-markers with Ø- *to give*

	Singular	Dual	Plural
1st person	opa-	hiɔ-	hitɔ-
2nd person	nɔ-	niɔ-	nekɔ-
3rd person	nɔ-	nuɔ-	nokɔ-

Another subclass is typified by the object-markers occurring with the verb roots ge- *to see* and hina- *to await*.

Matrix X: Object-markers with ge- *to see*

	Singular	Dual	Plural
1st person	ge-ya-	ge-heva-	ge-hita-
2nd person	ge-na-	ge-nia-	ge-ke-
3rd person	gɔ-	ge-nua-	ge-ke-

Matrix XI: Object-markers with hina- *to await*

	Singular	Dual	Plural
1st person	hina-ya-	hina-hiya-	hina-ta-
2nd person	hina-hi-	hina-nia-	hina-ki-
3rd person	hina-	hina-nua-	hina-ki-

Some examples with other verb roots are: nanuka-ya-re (*pass by-me-he*) *he passed by me*, aka-ya-re (*bite-me-he*) *he bit me*, pihe-ya-re (*call-me-he*) *he called me*, hepure-ya-re (*show-me-he*) *he showed me*, and gae-ya-re (*tell-me-he*) *he told me*.

2.15.4.2.3. *NOMINALS*

The structure of the noun appears to be + root + possessive suffixes + number as in ipo-hito *our father*, ipo-hito-mo *our two fathers*, and ipo-hito-po *our many fathers*.

Noun phrases evidence the noun followed by qualifiers as in wóite bóŋgae (*pandanus, red*) *red pandanus* and hámuŋge kʰúha (*man, all*) *all the men*.

The personal pronouns (Matrix XII) do not distinguish between inclusive and exclusive.

Matrix XII: Personal pronouns

	Singular	Dual	Plural
1st person	ima	hia	hita
2nd person	na	nia	neka
3rd person	gu	nua	noka

The nominal possessive suffixes (Matrix XIII) show similarities with the personal pronouns. It is possible that these possessive suffixes developed from personal pronouns which indicated possession when occurring after the noun. In time these pronouns became phonologically bound to the noun. Note, however, that elicited data indicate that possession also may be indicated by simply preposing a pronoun or noun as in ná páhe *my house* and ipó-e páha (*father-his, house*) *his father's house*.

Matrix XIII: Nominal possessive suffixes

	Singular	Dual	Plural
1st person	-o/yo	-(h)iyo	-(h)ito
2nd person	-na	-nia	-neka
3rd person	-e/-ye	-nuo	-noka

The clitics identified in the data are: (1) the subject/instrument clitic **-ka**, (2) the directional clitic **-ge** *towards*, (3) the locational clitic **-geku** *at*, (4) the associative clitic **-kahu** *with*, and (5) the benefactive clitic **-age** *for*.

2.15.4.3. CLASSIFICATORY STATUS OF WASEMBO (GUSAP)

Wasembo (or Gusap) has until now been regarded as a phylum-level isolate (see 1.3.4. in this volume). However, Z'graggen (personal communication), on the basis of similarities between pronominal forms and a limited number of basic vocabulary items, suggests that the Wasembo language is an aberrant language of the Pihom Stock (Madang and Adelbert Range Sub-Phylum in the Trans-New Guinea Phylum) located about 80-120 miles to the north-east in the Madang District (see 2.8.2.2.2.3.). Similarities also exist, however, with languages of the Rai Coast Stock (Madang and Adelbert Range Sub-Phylum, Trans-New Guinea Phylum, see 2.8.2.2.1.1.) located thirty miles to the north-east, and any definitive statement will have to await further study.

P A R T 2.16.

POSSIBLE WIDER CONNECTIONS OF PAPUAN LANGUAGES

McElhanon, K. "Isolates: Morobe District: Wasembo (or Gusap)". In Wurm, S.A. editor, *New Guinea area languages and language study, Vol. 1, Papuan languages and the New Guinea linguistic scene.*
C-38:897-904. Pacific Linguistics, The Australian National University, 1975. DOI:*10.15144/PL-C38.897*

2.16.1. POSSIBLE WIDER CONNECTIONS OF PAPUAN LANGUAGES: SOUTH-EAST ASIA

D.C. Laycock

This paper is based on two brief remarks in Laycock (1973) - remarks I never expected to be called on to justify, and which will hardly be justified in this article. The remarks are:

> Some of the features of Torricelli Phylum languages also tend to suggest a possible connection with the aboriginal languages (Senoi, Semang) of the Malaysian area; but a great deal more data is required before such a hypothesis can be adequately tested. (1973:7).

> It may not be too far-fetched to try to find a South-East Asian origin for speakers of Sko Phylum languages. Firstly, they use large seagoing canoes - tacking canoes, whereas the rest of Melanesia uses the reversing canoe only. Secondly, they speak a language that is highly tonal, with complex verb morphology, and extremely heterorganic consonant clusters - features duplicated in Burmese. Perhaps it would be going too far, however, to attempt to associate this group directly with the Dongson [bronzes][1] found not too far from Sko villages at Lake Sentani (Van Heekeren (1958); de Bruijn (1959)). (1973:57).

The second remark is easily disposed of; there is nothing to add to the information given there, except that it is now clear that the speakers of Sko Phylum languages have no known linguistic relatives anywhere else in the New Guinea area, or even beyond. Typologically, the languages are odd for the New Guinea area, but a great deal of the lexicon appears to consist of loanwords from Trans-New Guinea Phylum languages, with considerable phonological distortion. The mention of Burmese should not, of course, be taken as a serious suggestion of a link between Burmic languages and Sko Phylum languages; nevertheless, it remains true that the typological features of Sko Phylum languages are duplicated in no closer region.

The first statement cannot be dismissed so readily, though it would be totally false to assert that there is any real evidence which would link Torricelli Phylum languages of Papua New Guinea with the so-called

Laycock, D.C. "Possible Wider Connections of Papuan Languages: South-East Asia". In Wurm, S.A. editor, *New Guinea area languages and language study, Vol. 1, Papuan languages and the New Guinea linguistic scene.* **C-38:905-914**. Pacific Linguistics, The Australian National University, 1975. DOI:*10.15144/PL-C38.905*

'aboriginal' languages of the Malay peninsula; rather, there are a handful of typological resemblances which would make the suggestion worth following up - preferably by someone with extensive lexical materials on the Senoi/Semang languages.

Data on the Torricelli Phylum languages, for the purposes of this paper, is taken from the 50 words in 27 Torricelli Phylum languages in Laycock (1968) - supplemented, where necessary, by unpublished field-notes. However, reliable data on Senoi and Semang languages are hard to find, and modern data, and information on grammar, almost impossible. I have used Skeat and Blagden (1906) as the major source of the lexicon of both Semang and Senoi (which for the purposes of this paper, are not usually differentiated from each other); Carey's grammar (1961) of Temiar (a Senoi language) is useful for basic morphology, and a few facts can be gleaned from Asmah Haji Omar's tantalisingly brief grammatical notes (1963) on a Semang language. I have hesitated to use the Senoi (Sakai of Batang-Padang) material of Tauern (1914), as the grammatical statements are so patently wrong; he misses, for example, the subject-prefixes (treating them as arbitrary variations in the verb!), and his statements about the 'primitiveness' of Senoi also do not inspire confidence.[2] Ethnographic data, tribal classifications, and some scattered lexical items can be found in Schebesta (1927:Semang), Noone (1936:Senoi), Dentan (1968:Senoi), and Lebar and others (1964:Senoi and Semang), but again the major source is Skeat and Blagden (1906), who give an extensive bibliography. I have not bothered with works prior to the twentieth century.

Grammatically, both the Senoi/Semang language group and the Torricelli language group are characterised by the marking of subject in verbs by prefix; in world terms, this may not be an unusual feature, but it is striking in the New Guinea area, where it is found only in Austronesian languages of the area, in languages of the Sko Phylum, in languages of the Torricelli Phylum, and in languages of the Bird's Head area of Irian Jaya (mainly languages of the West Papuan Phylum). In Torricelli Phylum languages, the prefixes are remarkably stable from one end of the phylum to the other; a list of the major forms in 17 languages is given by Laycock (1968:40). Table I below is adapted from this, giving the most characteristic forms for comparison with those of a Senoi language (Temiar: Carey 1961). Torricelli forms are given in the order of their frequency of occurrence throughout the phylum; the less common forms are placed in square brackets.

TABLE I: SUBJECT PREFIXES IN TEMIAR (SENOI), AND IN TORRICELLI PHYLUM LANGUAGES

		Temiar	Torricelli Phylum
Sg.	1	i-	k-, Ø-, m- [kw-, x-, y-]
	2	ha-	Ø-, k-, y- [ñ-, x-, y-, t-]
	3m.	na-	n- [l-, r-, w-]
	3f.		w- [p-, n-, l-, kw-]
Du.	linc.	a-	w- [f-, p-, kw-, m-]
	lexc.	ya-	
	2	kaqa-	y- [f-, p-, w-]
	3m.	we-	p-, y-, m- [l-, h-, n-, t-]
	3f.		p-, y-, l- [m-, n-]
Pl.	linc.	ä-	m- [p-, f-]
	lexc.	ki-	
	2	nyob-	y- [f-, p-, w-]
	3m.	un-	p-, y-, l-, m- [h-, n-, t-]
	3f.		

It is immediately apparent that the prefixed forms in the two groups of languages bear little resemblance to each other (except perhaps in the singular), and that the categories do not coincide; Temiar distinguishes inclusive/exclusive in first person dual and plural, but no gender in third person pronouns, whereas the reverse is the case in Torricelli Phylum languages (though here the gender distinctions are maintained in non-singular numbers in only a few languages). I cannot find clear-cut data on the Semang categories, but they appear similar. It is possible, of course, that the differences in expressed categories could have come about by influence from other languages - in the Senoi/Semang case, probably from Malay.

Lexical resemblances between the two groups of languages are slight, as must necessarily be the case, given the time-depth that would have to be assumed if they are related. Table II gives some of the more striking lexical resemblances; as nothing is claimed on the basis of these resemblances, however, it was not thought necessary to identify the individual languages, which can be found from the sources of the vocabulary items (Laycock 1968 and Skeat and Blagden 1906).

TABLE II: SUGGESTIVE LEXICAL RESEMBLANCES BETWEEN TORRICELLI PHYLUM LANGUAGES AND SENOI/SEMANG LANGUAGES

English	Torricelli Phylum languages	Senoi/Semang languages
man	mana, maŋko, metene, monol, metfaine, mitik, məsin, masin, matei, maikən, makenti, məsəmiyen, məsən, matan, mukun, masən, mohon, mik	mah, mĕndi, mĕnik, hame, mi, semiah, mai
child	kan, kata, kat, kanəf	kohan, kuad, kĕ-nun, keɲ, kon
father	aya, aiye, ayi	ai, ē
mother	ama, ema; mukei, miye, mai, mikan, meŋ, me; na'ai, nəki, nuka	ame, ameng; mekn, mak; nak, na'
you	po, pei	bo
tongue	life, kəlep, yalip, wulaf	lĕ-peh, lĕ-pes, lïpes
day/sun	kepli, epli, wupli, kwipli, kwapli, wupli	bri, matbri
water	tepe, tipel, təpal, tipal, səpən, himpel, hipel, bør	tom, betiu, tiu, teu
ground	tef, tau, taf, takulu, tɨ, tax, sau, tap, sap, syap, hap, hapa	tek, tai, teh, tei, teik
stone	ta:ma, tumala, to:mu, talmanəf	tĕ-muh, tĕ-mu, tmu, gmu
two	wiŋkes, wiŋe, wiyəm, wiyum, wikat, wiyem, wilal, wiye, fiyə, piya, piyak, piyami, wiyeu, bium	uii, bī, be, beh, bie

In Table II, only forms having a wide distribution in each group have been taken; some more striking, but necessarily more suspect, resemblances could have been quoted if the less common words had been used.

There is little that can be concluded from Table II; there are a few good resemblances in basic vocabulary between the groups as a whole, but these would almost certainly sink to a chance level if any two individual

languages were compared. There is the further problem that the Senoi/Semang languages are now firmly classified as Austro-Asiatic, and thereby related to Mon-Khmer languages, as documented by Schmidt (1901) over seventy years ago. It seems, a priori, unlikely that Torricelli Phylum languages could be related to Mon-Khmer languages; a relationship with Senoi/Semang would have to be with the pre-Austro-Asiatic and Austronesian. Further, some of the Senoi/Semang items in Table II have good cognates in Mon and Khmer.

If the linguistic data is something much less than conclusive, we cannot make much of evidence from other fields. Racially, the Semang 'Negritos' could - in the absence of solid genetic evidence either way - conceivably be related to the short-statured Torricelli Papuans,[4] but the Senoi, in at least Skeat and Blagden's account (1906) appear racially very different. On the other hand, the inhabitants of the Torricelli Ranges in New Guinea - or at least those who speak languages belonging to the Torricelli Phylum - share one very striking cultural trait with the Senoi peoples: their aversion to warfare. This trait is stressed in Dentan's (1968) study of the Senoi Semai as 'a nonviolent people of Malaya', and is evident also in Fortune's (1939) account of what little warfare is recorded for the Arapesh (a Torricelli-phylum people). My own observations, especially in the western Torricelli (Lumi) area, support a view of Torricelli-phylum peoples (whose main form of defence is sorcery) as being non-aggressive, and as having an exaggerated retreat ('shame') reaction to aggressive criticism; compare also what Schebesta (1927:21) was told by a man who had 'forty years of experience' with the Semang:

> "Above all, don't be too abrupt with them", he repeated again and again. "They can't stand a gruff word and sense evil in every unfriendly gesture".

Such subjective impressions are of little value, and are set down here only for what they may be worth; but it seems unlikely that such a culture-trait could in any case have perpetuated itself for whatever time-depth would be necessary to permit a relationship (5,000 years, or 100,000 years?), in the face of cultural influences from many different sources.

In view of all the preceding, it would be extremely foolhardy to attempt to assert a relationship between the languages of the Torricelli Phylum on the one hand, and the Senoi/Semang languages on the other. The postulating of such widespread linguistic relationships is currently in disrepute, largely owing to the abuses of the nineteenth-century linguists, who were not averse to claiming Semitic origins for New Hebridean languages, or Dravidian origins for Australian Aboriginal

languages. Nevertheless, I feel it is desirable that linguists should be aware of the possibility of linguistic relationships extending beyond their own immediate area, and should conscientiously set down any clues they have that point in any not totally impossible direction. On this basis, I have tried to detail in this paper the basis of my remarks in Laycock (1973). No more is claimed.

NOTES

1. The original note has 'pottery', an unfortunate *lapsus calami* not picked up in the proofreading.

2. For example: 'Der niedrigen Kultur der Sakai entsprechend, ist die Sprache sehr primitiv.' And further: 'Die Sakai-Sprache besitzt nur Wörter, die man im Wald gebrauchen kann, alle anderen sind dem Malaiischen entlehnt, z.B. Eisen etc., und Konjunktionen, die in der ursprünglichen Sprache nicht nötig waren, da man nur in Einzelsätzen sprach und auch heute noch spricht...' Also somewhat amusing are his instructions on imitating Senoi voice-quality: 'Um die Stimme der Sakai nachzuahmen, streckt man beim Sprechen am besten den Kopf etwas vor und macht den Mund nicht weit auf, dagegen wird die Mundhöhle soweit als möglich gemacht.'

3. 'It is certain that the Semang dialects were not originally members of the Mon-Annam family' (Skeat and Blagden 1906:462).

4. Skeat and Blagden (1906:27) rightly pour cold water on Miklukho-Maklaĭ's belief that the 'Orang Semang' and 'Orang Sakai' ('Senoi') are 'pur sang Melanesians'; in any case, Miklukho-Maklaĭ was probably thinking more of the Austronesians within the Melanesian area than of the 'Papuans'.

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2.16.2. POSSIBLE WIDER CONNECTIONS OF PAPUAN LANGUAGES: TORRES STRAIT AND NORTH AUSTRALIA

S.A. Wurm

2.16.2.1. INTRODUCTORY REMARKS

It had been long believed that Torres Strait constituted a clear linguistic boundary between the Australian and Papuan language areas, with the western islands of Torres Strait containing an Australian language, Mabuiag, and the eastern ones a Papuan language, Miriam (Ray 1907). Only towards the mid-sixties, attention was beginning to be drawn to the somewhat un-Australian phonology of Mabuiag, and to the fact that a portion of its basic vocabulary was clearly of Miriam origin and therefore Papuan (O'Grady, Voegelin and Voegelin 1966). Earlier, Capell (1956) had pointed out the un-Australian features of the phonologies of some Cape York Peninsula languages, implying the possibility of un-Australian influence on these languages. Hale (1964, 1966) could demonstrate that the un-Australian characteristics of these languages were due to their phonologies undergoing strong changes from a normal Australian sound system which he reconstructed. However, he did not discuss the possible causes of these sound changes.

No attempt had been made until recently (Wurm 1972a) to study the possible influence of Australian languages upon Papuan languages of the south coast of the New Guinea mainland.

In Wurm 1972a, the author investigated possible mutual influences and connections of Papuan and Australian languages.

2.16.2.2. THE LANGUAGES OF TORRES STRAIT

Of the two languages mentioned above in 2.16.2.1., Mabuiag is unquestionably basically Australian in much of its structure and a part of its basic vocabulary, and has been classified as constituting a

Wurm, S.A. "Possible Wider Connections of Papuan Languages: Torres Strait and North Australia". In Wurm, S.A. editor, *New Guinea area languages and language study, Vol. 1, Papuan languages and the New Guinea linguistic scene.* **C-38:915-924**. Pacific Linguistics, The Australian National University, 1975. DOI:*10.15144/PL-C38.915*

separate group within the extensive Pama-Nyungan Family of the Australian Phylum (O'Grady, Voegelin and Voegelin 1966; Wurm 1972b).

However, some features of its phonology are un-Australian: all Australian languages have at least four, but more frequently five or six, linear distinctions with stops and nasals, with the number of the (oral) linear distinctions with stops and nasals identical in a given language. At the same time, in the great majority of Australian languages, only one series of stop phonemes is present. Many of them have two or several linear distinctions with l-sounds, only three vowel phonemes and almost all of them at least two distinct r-phonemes (O'Grady, Voegelin and Voegelin 1966; Wurm 1972b).

However, the phonemic inventory of Mabuiag is as follows:

p	ʈ	(t)	k	i	u
b	ɖ	(d)	g	e	o
m		n	ŋ	a	
		s			
		z			
		l			
		r			
w			y		

The phonemic contrast between the interdental and dental stops was only discovered in 1970 by T.J. Klokeid (Bani and Klokeid 1971). The phonemes t and d are statistically very rare and the nature of the phoneme inventory is indicative of the possibility of the incomplete adoption of an Australian phonological system by speakers of a non-Australian, presumably Papuan, language.

The most striking feature differentiating the Mabuiag phoneme inventory from the usual Australian ones is the difference in the number of linear distinctions of stops and nasals, with the number of linear distinctions observable with nasals in Mabuiag being below the Australian minimum. From a statistical point of view, it shows a tendency towards only three linear distinctions, with the presence of four with stops constituting a very rare phenomenon. This picture, together with the appearance of two series of stop phonemes, of a phonemic contrast between voiced and voiceless fricative phonemes at the same point of articulation (a feature absent from Australian languages in which even the presence of fricative phonemes as such is quite rare), of only one l and one r phoneme and of five vowel phonemes, makes the Mabuiag phoneme inventory look quite similar to that of a phonologically simple Papuan language -

in fact, it is very close to that of the neighbouring Papuan Miriam language which has the following phoneme inventory:

p	t	k	i	u
b	d	g	e	o
m	n		a	
	s			
	z			
	l			
	r			
w		y		

Apart from the statistically rare and low-productive phonological contrast between ʈ and t, and ɖ and d in Mabuiag, the only difference between the two inventories is the presence of ŋ in Mabuiag which is absent from Miriam. The presence of an ŋ phoneme is, at the same time, a universal feature of Australian languages. However, the appearance of an ŋ phoneme and of three or even four linear distinctions with both stops and nasals is not unknown in Papuan languages: in fact, it is a characteristic of the majority of the languages of the (sub-phylum-level) Trans-Fly Stock of the Trans-New Guinea Phylum (see Wurm 1971; also 2.6.1. in this volume) which occupies the part of the New Guinea mainland closest to Torres Strait and Cape York Peninsula, and to which Miriam also belongs. It is of course, conceivable that this characteristic of these Papuan languages may be due to Australian influence: some Trans-Fly Stock languages, e.g. Gidra of the Eastern Trans-Fly Family in it, have phoneme inventories which show some Australian characteristics along with un-Australian features. The absence of such Australian-type features from Miriam which is also a member of the Eastern Trans-Fly Family, is notable and its phonology is quite simple in contrast to that of Gidra and other members of the Family. This may well have resulted from Miriam having been exposed to the influence of the phonologically quite simple Southern Kiwai language, its geographical neighbour, which has influenced it very strongly on the lexical level. This Kiwai influence appears to have led to a partial breakdown and simplification of its phonological system, resulting in one which is largely shared by the structurally and lexically predominantly Australian Mabuiag whose phonology may well have been originally that of Miriam.

In general, the Mabuiag phoneme inventory seems to be more un-Australian in its basic characteristics than those of the phonologically

highly aberrant Cape York Peninsula languages. In spite of differences in detail and on the surface, the phoneme inventories of the latter show all the basic features of Australian phonologies, such as identity of the number of linear distinctions with stops and nasals, and the presence of at least two distinct r-phonemes. However, the Mabuiag differences are fundamental and deep-going, and this and the Papuan nature of some of its basic vocabulary makes it less Australian, and more Papuan, than the Cape York Peninsula languages which look quite un-Australian at first glance, but whose phonological aberrations can be explained in terms of regular changes from a standard Australian phonology, and in which these changes do not affect the basic principles of Australian phonologies. At the same time, their basic vocabularies are largely Australian.

The Papuan basic vocabulary items in Mabuiag pose some problems. Much of them are clearly Miriam, but the close relationship of that language to one other member of the Eastern Trans-Fly Family to which it belongs may perhaps obscure the possibly more immediate connection of some Mabuiag lexical elements whth those of other member languages of that family. Connections of some Mabuiag words with lexical elements of languages of other families of the Trans-Fly Stock such as the Kiwai and Pahoturi River Families (Wurm 1971; see also 2.6.1. in this volume) are also possible. However, the largely Miriam-type nature of Mabuiag phonology makes it seem likely that the major source of the Papuan element in it is Miriam.

Regarding Miriam itself, it appears to be structurally a typical Papuan language and, as has recently been established by the present writer, a member of the Eastern Trans-Fly Family (of the sub-phylum-level Trans-Fly Stock of the Trans-New Guinea Phylum) to which, in addition to Miriam, also Bine, Gidra and Gizra belong (Wurm 1971; see also 2.6.1. in this volume). Structurally and lexically, Gizra is the closest relative of Miriam. The simplified nature of Miriam phonology when compared with the other members of the Eastern Trans-Fly Family, and which is most probably attributable to Southern Kiwai influence, has already been mentioned above.

Apart from some Mabuiag loan-words of Australian origin, Australian influence in Miriam is negligible in contrast to the quite strong Papuan influence in Mabuiag.

2.16.2.3. POSSIBLE PAPUAN LINGUISTIC INFLUENCE ON CAPE YORK PENINSULA LANGUAGES

In 2.16.2.2. above, mention was made of the seemingly quite extensive, but in reality not deep-going, nature of the deviations from the

Australian standard, of phonologically aberrant Australian languages of Cape York Peninsula. The languages of four groups in the Cape York Peninsula area are especially involved in this, i.e. those of the Northern Pama and Central Pama Subgroups of the Pama-Maric Group and those of the Lamalamic and Mbabaramic Groups (Wurm 1972b).

The question may be raised as to what may have caused the strong phonological changes in these languages. In the light of the very high level of phonological uniformity observable in Australian languages (O'Grady, Voegelin and Voegelin 1966, Wurm 1972b) which may well be attributable to the fact that most Australian languages have apparently been free from outside linguistic influence for thousands of years, it seems plausible to suggest that the far-reaching phonological changes in the Cape York Peninsula languages referred to are due to outside linguistic influence and contact, and it seems logical to look to New Guinea and Papuan linguistic influence as the source of this. That influence from New Guinea has been prevalent in the Cape York Peninsula area seems evident from the racial appearance of Cape York Peninsula Aborigines, and linguistic influence may well have come the same way.

In trying to look for the exact origin of Papuan linguistic influence in Cape York Peninsula, Miriam and the languages of the Trans-Fly area of New Guinea appear to be obvious sources. However, very few of the phonological features of present-day Cape York Peninsula languages show any evident similarity to those of these Papuan languages, except for the appearance of fricative and aspirated stop allophones. At the same time, the un-Australian syllable patterns observable in present-day Cape York Peninsula languages are not directly comparable to those of the Papuan languages mentioned. When taking all this into account, and remembering the fact that the assumed outside, and probably Papuan, linguistic influence has not destroyed the fundamental Australian nature of the Cape York Peninsula languages, it may be proposed that this influence has been relatively superficial despite its pronounced surface effects, and the precise point or points of origin of it in New Guinea cannot, at this juncture, be even suggested. It may well be that this influence has been brought about by very small groups of, perhaps refugee, Papuan speakers - or even only a few individuals - from diverse regions in or near the Trans-Fly area who got into lasting contact with small groups of speakers of various Australian languages in Cape York Peninsula in comparatively recent times.

2.16.2.4. AUSTRALIAN LINGUISTIC INFLUENCE IN NEW GUINEA

The possibility of influence of Cape York Peninsula languages on languages in the adjacent parts of southern New Guinea had not been

investigated until 1972, though the question of the possibility of linguistic and cultural connections or similarities between Cape York Peninsula or Australia as a whole and parts of New Guinea has been raised, but not looked into in detail (see 2.16.3.1.).

The present writer (Wurm 1972a) was the first to investigate whether or not evidence of Australian linguistic influence from Cape York Peninsula could be found in Papuan languages of the Trans-Fly region. The interesting result of this was the discovery of a number of similarities between forms reconstructed by Hale (as listed in Sommer 1969) for a number of Cape York Peninsula languages and referred to by him as proto-Paman, and lexical items in languages of the Eastern Trans-Fly Family, especially the Gizra language. Some of these items in the Eastern Trans-Fly Family languages are obviously Australian loans which have entered these languages at a point of time antedating the phonological changes mentioned above in 2.16.2.3. as suffered by Cape York Peninsula languages as a result of probably Papuan linguistic influence. In the case of other items, the situation is not so clear. One of the most striking cases of proto-Paman loanwords in languages of the Eastern Trans-Fly Family is the Gizra word for *man, person* which is pa:m. This is clearly proto-Paman *pama = *person*. The other three languages of the Eastern Trans-Fly Family have different, but interrelated, words for *man, person*, i.e. Gidra rəga, Bine rorie, and Miriam le.

Other apparent proto-Paman loanwords of the Eastern Trans-Fly Family are:

Proto-Paman *kuman = *thigh*, Gidra and Gizra gɯɔm-kak, whereas Bine has wawe and Miriam wakel.

Proto-Paman *tʸulpi = *belly*, Gizra dupi-war. Gidra has kɔ:m, Miriam kem and Bine amuge which appear to be derived from Proto-Paman *kampu = *stomach*.

Proto-Paman *muyu = *husband*, Gizra myœrə, Miriam ki-miar, whereas Gidra has rivi and Bine rorie (= *man*).

Proto-Paman *ŋaRa = *enter*, Gizra tubə-ŋəri, whereas Miriam has bodari.

Proto-Paman *pura = *pull*, Gizra a-mura, Miriam -muda and Bine sugre-mali-ti.

Proto-Paman *yaŋan = *hair of head*, Gizra ar-ŋaɨn, whereas Gidra has mɔkŋəz, Bine edingali and Miriam mus or ed.

Less obvious Proto-Paman loanwords may be:

Proto-Paman *ka:pa = *flood, heavy rain*, Gizra ŋu:pa, Bine ŋu:pe, whereas Gidra has piro and Miriam imer, all meaning *rain*.

Proto-Paman *tʸa:ra or *tʸa:wa = *mouth*, Gizra ta:i, Miriam te, Gidra tu:mor and Bine tage.

Proto-Paman *ma = *take* - also Common Australian **ma - Gizra pa, whereas Gidra has eœt, Bine eate and Miriam ais.

A few Common Australian proto-forms which are not found in Proto-Paman seem to be present as loanwords in Trans-Fly languages, e.g.

Common Australian **kuli = *hear* (proto-Paman *ŋami), Gizra ar-kuru, Gidra ut-kun, Bine ati-ize and Miriam asoli. It is however conceivable that Gizra ar-kuru is derived from proto-Paman *kuRu = *eye* rather than from Common Australian **kuli.

Common Australian **kampu = *egg*, Gizra ur-gu:p, Gidra kœp, Bine ku, whereas Miriam has wer. The proto-Kiwai form (Wurm 1951) is *kikopu, Agöb (Pahoturi River Family, Trans-Fly Stock) has kœp and Aturu (Tirio Family, Trans-Fly Stock) has lo-kumɔ. (There is a difference in the traditions of Common Australian **kampu = *egg* and proto-Paman *kampu = *stomach* mentioned above.) At the same time, similar and probably connected, forms are found in other parts of New Guinea, mostly meaning *fruit*. In many parts of New Guinea, either one lexeme means both *egg* and *fruit* or items meaning *egg* in one language are cognate with items meaning *fruit* in other languages. So, for instance, in Huli (West Central Family, East New Guinea Highlands Stock, Trans-New Guinea Phylum (see 2.7.2.2. in this volume)) haba(na) is *fruit*, in Kamano (East Central Family, same stock) əmu = *egg*, in Kuman (Chimbu proper) (Central Family, same stock) koamuglo = *egg*.

This raises the problem of the presence, in a number of widely scattered Papuan languages, of lexical items which look like (loan?) cognates of Common Australian or proto-Paman items. One of these is Common Australian **ŋamaŋ = *breast* (proto-Paman *ŋama/ŋamu = *mother, breast*) which has apparent cognates in many Papuan languages, e.g. Trans-Fly Stock: Gizra ŋyœm, Gidra ŋɔ:m, Bine ŋame, Miriam nem (ŋ is absent from Miriam), Coastal Kiwai amo; East New Guinea Highlands Stock: Kuman (Chimbu proper) æmu, Kamano ami; Central and South New Guinea Stock: Duna amu, Kaeti am, Syiagha ome; Suki-Gogodala Stock: Gogodala omo; Finisterre Stock: Rawa nomo, Gusan nom; Huon Peninsula Stock: Ono ŋamu, Dedua namu; Binandere Stock: Binandere ami; Sentani Stock: Sentani nim; etc. All these languages are members of the very large Trans-New Guinea Phylum (see 2.5. in this volume). However, probable cognates are also encountered in languages not related to this phylum, e.g. Monumbo (Torricelli Phylum, see 2.12. in this volume) nimaŋ. The fact that, as may not be clear from the few selected examples given above, diachronically later forms such as forms without initial nasal predominate in areas which are geographically more distant from Cape York Peninsula than others, may suggest that these forms are in fact Australian loanwords which have entered New Guinea from Cape York Peninsula and spread widely through New Guinea.

In addition to the lexical phenomena discussed above, the appearance of an ŋ phoneme in the majority of the languages of the Trans-Fly Stock (it is absent from Miriam and the languages of the Kiwai Family which are the geographical neighbours of Miriam) may perhaps be the result of Australian influence: it is not a common phoneme in Papuan languages. The same may apply to the comparatively frequent presence of palatal stop and palatal nasal phonemes in Trans-Fly Stock languages: these are also rather rare in Papuan languages in general. Also, the identity of the number of linear distinctions with stop and nasal phonemes in some of these languages which results from the presence of ŋ and palatalized stop and palatalized nasal phonemes in them, gives a part of their phoneme inventories an Australian appearance.

2.16.2.5. CONCLUDING REMARKS

From what has been stated above in 2.16.2.1.-4., it appears that, apart from a few tenuous lexical and other links which remain unexplained at this stage, connections between Papuan and Australian languages across Torres Strait can be attributed to mutual linguistic influence and the adoption of loanwords. It seems that the influences have gone in both directions, with a northward Australian linguistic influence antedating a scattered southward Papuan linguistic influence. At the same time, speakers of a Papuan language migrating to the western islands of Torres Strait seem to have adopted an Australian language while maintaining much of their Papuan phonological habits and some of their Papuan basic vocabulary.

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2.16.3. POSSIBLE WIDER CONNECTIONS OF PAPUAN LANGUAGES: PAPUAN AND AUSTRALIAN; GREENBERG'S INDO-PACIFIC HYPOTHESIS

S.A. Wurm

2.16.3.1. INTRODUCTORY REMARKS

In addition to what has been discussed in 2.16.1. and 2.16.2. in this volume, a few other suggestions concerning possible connections between Papuan languages and outside languages have been made by various linguists. In this connection, the remarks made in 2.16.2.4. about the suggestive similarity between a few widespread lexical items both in Australian and in Papuan languages come to mind, and H. Kerr (personal communication) has observed some basic structural similarities between Australian and some Papuan languages on the pronominal and verbal levels. Also, Laycock (1973) points out the general resemblance between the phonology of the languages of the Ndu Family in the Sepik-Ramu Phylum (2.11.3.1.3.) and the general phonological set-up of Australian languages. He says (Laycock 1973:58):

> It is perhaps worth mentioning here also the general resemblance of the Ndu family phonology to that of Australian aboriginal languages. This, taken together with a number of other cultural and genetic features (similar blood groups (MacLennan et al. (1969)); occurrence of spear-thrower and 'bark' paintings; resemblance of slit-gong melodies to didjeridu melodies) could suggest some kind of contact in the past, with the Ndu family much further to the south than at present. Perhaps clues can be sought in the Purari area, where the art-styles resemble those of the Sepik; resemblances between Kambaramba and the Purari were noted previously by Speiser (1937).

2.16.3.2. GREENBERG'S INDO-PACIFIC HYPOTHESIS

2.16.3.2.1. *GENERAL REMARKS*

The strongest claim for the existence of possible, and apparently genetic, links between Papuan and outside languages has been made by Greenberg (1971) in the framework of his Indo-Pacific Hypothesis. Already well over a decade ago, Greenberg (1958, 1960) had suggested the existence of a large group of interrelated languages including the Papuan languages as well as those of the Andaman Islands, and those of Tasmania.

Wurm, S.A. "Possible Wider Connections of Papuan Languages: Papuan and Australian; Greenberg's Indo-Pacific Hypothesis". In Wurm, S.A. editor, *New Guinea area languages and language study, Vol. 1, Papuan languages and the New Guinea linguistic scene.* **C-38:925-934**. Pacific Linguistics, The Australian National University, 1975. DOI:*10.15144/PL-C38.925*

At that time, the view was still generally held that the Papuan languages themselves were not interrelated, but belonged to a large number of separate groups which were thought to be unrelated to each other (Wurm 1971, 1977; see also 1.3.2. and 2.1.1.5.1. in this volume). In that linguistic climate, Greenberg's suggestions were not received favourably by linguists concerned with the New Guinea area.

More recently, Greenberg (1971) presented a modified and expanded version of his theory, basing it on some structural evidence in addition to the lexical to which his earlier work was restricted to a great extent. Attitudes towards the question of interrelationship or otherwise of Papuan languages had, in the meantime, undergone revolutionary changes (Wurm 1977; see also 1. and 2.1. in this volume) as a result of the very large-scale intensive work in Papuan linguistics since the time at which Greenberg had made his first suggestions. It had been recognised that Papuan languages belonged to a quite small number of separate groups (see 1.3.4.), one of them, the Trans-New Guinea Phylum, of quite disproportionately large size and covering more than four-fifths of the New Guinea mainland and a part of the Timor-Alor-Pantar Islands (see 2.5.1. in this volume). However, genetic relationship between these separate groups is still believed to be absent.

Nevertheless, these fundamental changes in the general attitudes towards the question of interrelationship between Papuan languages have brought about a situation in which views such as those put forward by Greenberg seem more plausible and are potentially more acceptable than this had been the case before, even if only in terms of the potential relationship of outside, i.e. non-New Guinea area, language groups to a particular one of the separate Papuan language groups in that area.

In this, it has to be pointed out that most of the material on which Greenberg has based his work, is poor to very poor, and known to be of a low level of reliability in the light of more recent research in Papuan linguistics. At the same time, some of his approaches based on the information available to him do not give much cause for confidence on the part of the reader, and his results are therefore not above suspicion (Franklin 1973).

An appraisal of Greenberg's proposals regarding the interrelationship between the Papuan languages themselves is outside the scope of this section which is concerned with the question of the external relationships and connections of Papuan languages. However, Greenberg's claim of a genetic relationship between Papuan languages which, on the basis of very much more extensive information and study than was available to him and had been carried out by him, are believed to be genetically

unrelated, weakens the strength of his suggestions concerning the interrelationship of Papuan languages to some outside languages.

2.16.3.2.2. *TASMANIAN LANGUAGES AND PAPUAN LANGUAGES*

Of the two outside language groups for which Greenberg claims relationship to Papuan languages, his case for the Tasmanian languages is by far the weaker one.

The Tasmanian languages, extinct since the end of the nineteenth century, constituted a small family of two to five languages and were spoken on the island of Tasmania, to the south of eastern Australia. The view is generally held that apparently no relationship exists between them and any outside languages (Wurm 1972), though increasing attempts are being made to link them with the Australian languages. The material available on these languages is appallingly poor and unreliable, and open to widely varying interpretations which is part of the reason for the uncertainty surrounding the relational position of the Tasmanian languages.

In his work concerned with the comparison of features of the fourteen groups established by him within his large overall Indo-Pacific group, Greenberg has taken recourse to thirteen structural criteria. Of these, only one concerning the form of the second person singular pronoun is present in the Tasmanian languages. The other groups share mostly four to six, in a few instances more, up to eleven, structural criteria - only one Papuan group shares only two. On the lexical level, Tasmanian languages figure only in eighteen of the eighty-four sets of Indo-Pacific etymologies (Greenberg 1971), and in several of these the formal similarities between the Tasmanian and other items do not seem very convincing. It is somewhat striking that any similarities present tend to be more with languages now recognised as belonging to the East Papuan Phylum (see part 2.13. in this volume) and to a lesser extent to members of the West Papuan Phylum (see part 2.10. in this volume) than with other Papuan languages. Both these groups are likely to be archaic and to antedate the advent in the New Guinea area of languages constituting the large Trans-New Guinea and Sepik-Ramu Phyla (see 3.4.1.).

2.16.3.2.3. *ANDAMAN LANGUAGES AND PAPUAN LANGUAGES*

The situation regarding the possibility of the existence of some link between the languages of the Andaman Family and some Papuan languages is different, and a greater degree of similarity is apparent than is the case with the Tasmanian languages.

The Andaman languages constitute a family of three, possibly four, languages - one of these differs so much from the other languages in vocabulary that on the basis of lexical evidence alone it could not be included with them into the same family. However, there are considerable structural agreements between the languages. They are spoken on the Andaman Islands located west of the neck portion of the Malay Peninsula, between the Bay of Bengal and the Andaman Sea. The languages have been generally regarded as unrelated to any outside language. The Andaman people are negritos, and the only negrito people outside the New Guinea area who have preserved their original language - other negritos such as those of the Malay Peninsula and Luzon in the Philippines have adopted Austro-Asiatic or Austronesian languages.

In his comparison of the Andaman languages with the Papuan languages, Greenberg indicates that four of his thirteen structural criteria are present in the Andaman languages. These comprise the forms of the personal pronouns of the first and second persons singular and of the third person plural. It is correct that the first person singular pronominal forms in the Andaman languages are formally very similar or identical to equivalent forms as encountered very commonly in languages of the West Papuan Phylum which belong to set III (see 2.3.3.4. in this volume) of the personal pronouns in Papuan languages. The Andaman second person singular pronominal forms show agreement with forms restricted largely to the East Papuan Phylum languages. The third person plural pronominal forms in Andaman languages do however not agree with the typical Indo-Pacific forms postulated by Greenberg. At the same time, the Andaman first person plural pronominal forms show formal agreement with the equivalent Papuan forms of set II (see 2.3.3.3. in this volume) which are prevalent in languages of the West Papuan Phylum, and also are quite strongly in evidence in languages of the Torricelli Phylum (see 2.12. in this volume), and in the sub-phylic Trans-Fly Stock of the Trans-New Guinea Phylum (see 2.6.1. in this volume) - this stock contains a strong archaic sub-stratum.

The fourth structural criterion to which Greenberg refers is the verbal suffix -ka which denotes past tense. This agrees perfectly with the equivalent suffix in some West Papuan Phylum languages such as those of the Northern Halmahera Family. A suffix indicating past tense and consisting of -k + a usually open vowel, often -a, is found in a number of other Papuan languages, mostly members of the East Papuan Phylum, and in frequently sub-phylic (i.e. containing an old sub-stratum) stocks of the Trans-New Guinea Phylum.

There are other structural similarities between Andaman languages and some Papuan languages which escaped Greenberg's attention. Andaman

languages are characterized by a complex system of corporal and nominal classifying prefixes to nouns (Temple 1902, Radcliffe-Brown 1964) - this is a feature encountered for instance in some languages of the sub-phylic Trans-Fly Stock of the Trans-New Guinea Phylum, e.g. in Miriam (Ray 1907). Similarly, different suffixes appear with pronouns in Andaman languages to denote tense - this feature is parallelled in some Papuan languages, again for instance in Miriam. However, in these two cases, no formal similarities are involved, and the agreements are purely typological.

A typological agreement with West Papuan Phylum languages, and also some other Papuan languages is the appearance of personal prefixes with verb and noun-functioning words. At the same time, Andaman languages differ typologically from most Papuan languages in several respects.

On the lexical level, Andaman languages appear in thirty of Greenberg's eighty-four Indo-Pacific etymologies, and in quite a few of these some of the agreements, especially with languages of the West Papuan Phylum, and with those of the Timor-Alor-Pantar area which constitute a sub-phylum in the Trans-New Guinea Phylum, to a lesser extent with those of the East Papuan Phylum and some other sub-phylic stocks of the Trans-New Guinea Phylum, are quite striking and may amount to virtual formal identity - the questionable reliability of much of the vocabulary material relied on by Greenberg has however to be kept in mind in this.

2.16.3.3. CONCLUSION

Taking into account what has been said in the above sections, there seems to be little grounds for considering a link between the Tasmanian languages and Papuan languages in general as a serious possibility, though a few lexical similarities between the Tasmanian languages and members of the East Papuan Phylum and West Papuan Phylum are apparent.

However, there seems to be some evidence in support of the possibility that the Andaman languages may have some link, perhaps relational, with languages of one or several of the more archaic Papuan phylic groups, especially the West Papuan Phylum which is geographically closest to them, though the distance between them is still considerable, even though an almost unbroken island chain exists between their respective areas. The situation is made more difficult by the presence of similarities between the Andaman languages and other largely archaic Papuan languages as well such as members of the East Papuan Phylum and some sub-phylic members of the Trans-New Guinea Phylum which contain a strong archaic sub-stratum. These various Papuan language groups are, in the light of our present knowledge, regarded as genetically unrelated to each other.

However, there are indications that an old sub-stratum is widespread in the Papuan language area with traces of it present in several apparently unrelated language groups, and the possibility of a link between the Andaman languages and this sub-stratum element may exist.

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DIVISION 3.

LINGUISTIC PREHISTORY

3.0. PAPUAN LINGUISTIC PREHISTORY, AND PAST LANGUAGE MIGRATIONS IN THE NEW GUINEA AREA

S.A. Wurm, D.C. Laycock, C.L. Voorhoeve, T.E. Dutton

3.1. INTRODUCTORY REMARKS

The development of the linguistic picture during the last twenty years, and its nature, as described in various chapters and sections of this volume, have been conducive to speculations about the spreading of language groups through parts of the New Guinea area, and the probable directions of such movements.

As a result of the intensive linguistic work carried out in the New Guinea area in recent years, a sizable amount of linguistic and inter-disciplinary evidence has emerged which makes it possible to draw some conclusions concerning the nature, directions and sequence of possible linguistic migrations into and within the New Guinea area in the past.

3.2. LINGUISTIC EVIDENCE

Very briefly, linguistic evidence for such language migrations is as follows:

3.2.1. *PERSONAL PRONOUNS*

Almost all the personal pronoun forms met with in the Papuan languages are members of three main sets which contain two sub-sets, and of which the third main set, set III (see 2.3.3.4. in this volume), seems to be derived from the other two. A fourth small set, set B, occurs in addition (see 2.3.3.7.). The distribution of these sets is regionally well defined and cuts across relationship boundaries in many instances. Nevertheless, the appearance of the first main set, set I (see 2.3.3.2.), shows strong correlations with the presence of languages of the large

Wurm, S.A., Laycock, D.C., Voorhoeve, C.L. and Dutton, T.E. "Papuan Linguistic Prehistory, and Past Language Migrations in the New Guinea Area". In Wurm, S.A. editor, *New Guinea area languages and language study, Vol. 1, Papuan languages and the New Guinea linguistic scene.* **C-38:935-960**. Pacific Linguistics, The Australian National University, 1975. DOI:*10.15144/PL-C38.935*

Trans-New Guinea Phylum (see 2.5.2.2.) and seems to be closely associated with it. In border areas of that phylum which are often sub-phylic in status, pronominal members of the other sets predominate. The scattered occurrence of the fourth small set, set B, seems to be associated with language groups which do not belong to the two major Papuan phyla, i.e. the Trans-New Guinea and the Sepik-Ramu Phyla, and it also appears in aberrant, sub-phylic parts of these phyla (see 2.3.3.7.).

In many languages, separate masculine and feminine forms appear in the third person singular: in some languages which have no gender distinction and which are largely located to the east of languages with two genders in the New Guinea area, the third person singular pronoun forms give the appearance as if they were the result of a fusion of elements which are formally similar to the masculine and feminine pronouns in two-gender languages. At the same time, in some sections of the southern central New Guinea mainland which appear to have been areas of strong language contact when considering the appearance, in individual languages, of typological and other features which constitute a mixture of features appearing separately in individual languages elsewhere, pronominal forms denoting other persons are met with which seem to be products of a fusion between pronominal members of two different sets. Such forms re-appear further east in clearly defined areas along a potential language migration route. Furthermore, apparently more archaic pronominal forms of at least two of the sets predominate in western parts of the mainland.

3.2.2. *TYPOLOGICAL AND STRUCTURAL FEATURES*

The majority of the Papuan languages belongs to two main types which show considerable distributional parallelism with the occurrence of two of the main pronominal sets mentioned above, with languages containing the third set belonging to either of the types, with that associated with the first of the two main sets predominating (see 2.3.2.2.). However, considerable mutual influence and overlapping between the two main types can be observed and two more minor types are found, as well as some special types of rather restricted occurrence. Here again, mutual influences and overlapping are strongly present.

Apart from the similarities in the pronoun forms - and in part also pronominal systems - as referred to above, there is widespread identity or great formal similarity in subject and even more so object markers with verbs in a wide region within the Trans-New Guinea Phylum, extending from the Huon Peninsula, Finisterre Ranges and adjacent areas through the eastern part of the highlands of Papua New Guinea, and following the northern slope of the highlands ranges to the central hub-area of the

New Guinea mainland and from there westwards to the western limits of the highlands in Irian Jaya, and even beyond into the Bomberai Peninsula. This phenomenon is most strongly in evidence in the east and becomes progressively weaker westwards, and largely parallels the strongest distribution of the Austronesian loanwords mentioned below.

Considerable additional evidence concerning the patterned distribution of typological and structural features in various parts of the New Guinea area is available (e.g. Wurm 1964) which allows some conclusions to be drawn concerning possible past language migrations.

3.2.3. *AUSTRONESIAN LOANWORDS*

In their work leading to the establishment of the Trans-New Guinea Phylum, McElhanon and Voorhoeve (1970) unravelled the presence of a number of Austronesian loanwords, some of them recognisably of Eastern Oceanic type, far in the interior of the New Guinea mainland. Further work by the present writer (Wurm 1977, see also 2.5.4.2.2. in this volume) has demonstrated that such loanwords are present over a wider area than originally assumed by McElhanon and Voorhoeve, and are in evidence as far as the Bomberai Peninsula in Irian Jaya, and that their main distribution parallels that of the occurrence of the subject and object markers mentioned above in 3.2.2. As is the case with those markers, these loanwords are most strongly present in the east.

3.2.4. *SUBSTRATA*

The presence of a considerable number of mostly geographically quite well definable substrata in various language groups and language areas (see 2.5.4.2.1. in this volume) also constitutes important evidence for the subject matter of this chapter.

3.2.5. *VOCABULARY*

Lexical evidence agrees with that offered by typological and structural features in many instances, but there are quite a few instances of considerable contradiction between these two types of evidence. Many of these can be explained in terms of extensive borrowing between languages on all levels (see below 3.2.6.). Vocabulary is most strongly affected by this borrowing, and lexical evidence by itself has therefore come to be regarded as a criterion of very doubtful validity in Papuan linguistics - it only becomes valuable if supported by additional evidence (McElhanon 1970; Wurm 1977, see also 2.2.3. in this volume).

Lexical evidence can become important if it constitutes an obvious substratum feature. So for instance, low-level lexical and phonological correspondences that appear to exist (though the evidence is still very weak) in some South-East Papuan languages (T. Dutton, personal communication) may represent lexical substrata resulting from contact between these languages at some earlier time (see 2.13.1.1., also 2.9.5.7. and 2.9.5.6.).

3.2.6. *SOCIO-LINGUISTIC FACTORS*

A special peculiarity of the Papuan linguistic world is the ease with which features generally believed to be "unborrowable" or at least not readily borrowable have apparently been borrowed between languages to a very marked degree. Basic vocabulary items of one language which, as has been postulated by the tenets of lexicostatistics, are "unborrowable", can often be met with as obvious loanwords in other totally unrelated languages; pronouns, singly and in sets, are adopted by languages from other languages; also the structures of many languages have seemingly undergone quite drastic changes under the influence of other, sometimes unrelated, languages. Phonologies can be altered extensively under such an influence, and the only apparently relatively stable and persistent items and features in Papuan languages which, in consequence, have great diagnostic importance in comparative and classificatory work, are verbs and the principles underlying them, principles underlying pronominal systems - to a much lesser extent the pronouns themselves as lexical items - and semantic characteristics of the groupings of lexical items (e.g. *fire* and *tree* can, in one language, be two different meanings of one lexical item; but in another language, the meanings of two different lexical items: such principles are preserved in a given language even if the lexical items themselves are borrowed by it from another language in which such items have semantic ranges which are at variance with those observable in the borrowing language). There are several languages especially in the Sepik-Ramu Phylum, which show differing phonologies, relatively little cognation in nouns, and great differences in the form, but not the system, of their pronouns, but have many verbs in common, together with much of their verb morphology.

Instances of languages undergoing changes quite rapidly under the influence of other languages can be observed today in the New Guinea area, and while the reasons for the occurrence of very extensive mutual language influences in the Papuan linguistic world have not yet been studied in detail, it appears that the great prevalence of active and passive bi- and multilingualism in the New Guinea area may very well be

a contributing factor. The problem of "mixed" languages raised its head in this connection (see 2.2.2. and part (II) 4.5.). It seems that the question of "mixed" languages deserves a re-examination in the light of the results of Papuan linguistics (Wurm 1972a, 1977). The distribution of cultural vocabulary on the New Guinea mainland (Dutton 1973, see also (III) 5.2.0.) also offers important clues to the subject matter of this chapter, but all the problems briefly touched upon in this section 3.2.6. have an important bearing upon the question of past language migrations.

3.3. INTERDISCIPLINARY EVIDENCE

In addition to the linguistic evidence touched upon above in 3.2., some interdisciplinary evidence is available which corroborates conclusions drawn about possible language migrations on the basis of linguistic evidence, and is of particular value in offering possible solutions in instances in which the linguistic evidence is not conclusive. Evidence of this kind is offered by prehistory, for instance the valuable recent discovery that the presence of the pig in New Guinea dates back to only five thousand years or less (J. Golson, personal communication) which agrees well with the date at which the Austronesians are believed to have entered the New Guinea area (Wurm 1967) and with the presence of an Eastern Oceanic Austronesian loanword for *pig* in many Papuan languages (see above 3.2.3.). Physical anthropology also gives important clues such as the high presence of the Gerbich A negative blood type (Laycock 1973:57) which is a unique characteristic of speakers of Torricelli Phylum languages and also occurs in areas adjacent to them in the West and East Sepik Districts, amongst present-day Austronesian speakers of the Markham Valley, and also in areas further east. The distribution of certain axe types on the New Guinea mainland parallels that of some language types and groups to some extent - in particular, the area of distribution of the Gerbich A negative blood type just mentioned is similar to that of a particular type of axe (E. Crosby, personal communication). Other kinds of interdisciplinary evidence have been drawn upon in the study of possible past language migrations (Wurm 1964, 1966).

Cumulative linguistic and interdisciplinary evidence has led to interesting results in such studies (Wurm 1964, 1966; Voorhoeve 1969), and has been utilised in reaching the tentative present views concerning past linguistic migrations in the New Guinea area (Wurm 1972a, 1977) which will be briefly outlined below.

3.4. THE PICTURE OF POSSIBLE PAST LANGUAGE MIGRATIONS IN THE NEW GUINEA AREA

3.4.1. *PAPUAN MIGRATIONS*

It appears that the presence of man in the New Guinea area goes back at least 60,000 or more years (Golson 1966a,b) and it may perhaps be possible to assume that at least some of the isolates and small phylic groups as well as the languages of the Torricelli Phylum, are directly descended from very old languages, or at least contain very old substrata. Of the substrata observable in mostly aberrant and sub-phylum-level members of the Trans-New Guinea and Sepik-Ramu Phyla, some may be quite old too, and the same may well be true of the elements encountered in the West Papuan and East Papuan Phyla. In general, however, it seems unlikely that, as far as four of the five large Papuan phyla (see 1.3.4.) are concerned, the bulk of the language elements present in the Trans-New Guinea and Sepik-Ramu Phyla have been longer in the New Guinea area than perhaps 10,000 years or even much less, with the time-depth probably greater in the case of the West Papuan and East Papuan Phyla.

It seems impossible to even venture a guess at this stage as from where and by which route most of the very old languages and substrata referred to above may have entered the New Guinea area and spread within it. It seems plausible to assume that they came through the island world to the west of the New Guinea area from a region yet to be determined. Interdisciplinary evidence and the study of languages spoken by negritos in south-east Asia (see 2.16.1.) and on the Andaman Islands may perhaps contribute something to the solution of this problem. It may be appropriate to mention here Greenberg's (1960, 1971) work and his suggestion regarding the existence of some possible connection between Papuan languages of the New Guinea area and the languages of the Andaman islanders (see 2.16.3.2.3. in this volume).

The distribution and location of some of the major substrata in Papuan languages (see 2.5.4.2.1. in this volume) provide some vague pointers to the possible place of entry into, and the spreading in, the New Guinea area, of old Papuan linguistic elements. The languages of the Vogelkop Peninsula, especially those in the northern part of it, as well as those in the northern part of the non-peninsular main portion of Irian Jaya, contain a common lexical substratum which extends to the south into the eastern part of the Irian Jaya highlands areas. At the same time, a substratum manifesting itself mainly on the structural and typological levels, i.e., in a prevalence of set II pronouns, an overt two-gender system, a tendency to prefixing in the morphology, number marking with nouns, verb stem suppletion and alteration in connection

with object and subject marking and the absence of medial verb forms (see 2.3.2.2. in this volume) is, in varying degrees, mostly in evidence in the same areas (and reaches further east in the north), as well as in the south-eastern part of Irian Jaya, the adjacent southern parts of Papua New Guinea, and extends its influence, with interruptions, as far east as the Angan Family of the Trans-New Guinea Phylum (see 2.7.4.) whose speakers seem to have adopted an East New Guinea Highlands Stock type language, though a few of the features mentioned above appear in the Angan Family languages as a substratum element.

It seems tempting to suggest that this far-flung substratum, which may perhaps have surviving primary manifestations in some members of the West Papuan Phylum which have remained relatively free from outside influence such as the languages of Northern Halmahera, in the Torricelli Phylum and perhaps also in the East Papuan Phylum, may outline the earlier presence in the New Guinea area, of an old language type which entered the area from west of northern Halmahera and the Vogelkop Peninsula and spread from there to the regions of its present occurrence, to be later overrun and reduced to substratum level by subsequent language migrations. An apparently even older language level may be recognisable in terms of the scattered occurrence of pronouns of set B (see above 3.2.1.) met with in small language phyla and isolates not related to the large phyla, and in mostly sub-phylic and aberrant areas of the large Papuan phyla.

Another substratum is noticeable on the lexical level in the languages of the Kolopom (or Frederik Hendrik) Island and the South Vogelkop Sub-Phyla, with weaker occurrences in the Bomberai Peninsula area. It seems to reflect a language element which was present in these areas before the advent of the Trans-New Guinea Phylum languages.

The mentioning of set II and set B pronouns above indicates that the distribution of pronoun forms of various sets in the New Guinea area constitutes one good piece of tangible evidence for the spread of languages in the past, reaching back into periods which are well pre-Austronesian, i.e. well before 3,000 B.C. It appears that the pronoun forms of the first of the three main sets mentioned in 3.2.1., i.e. set I (see 2.3.3.2. in this volume) - and with it, an archaic lexical and at least in part also typological Trans-New Guinea Phylum element - may have entered the New Guinea area comparatively late via Timor, Alor and Pantar from where they reached the Bomberai Peninsula and the south coast of Vogelkop Peninsula, and penetrated east through the West New Guinea highlands and/or lowlands to a central region around the southern half of the present Irian Jaya-Papua New Guinea border. In this general area, the pronominal forms fused from two elements as mentioned above in 3.2.1. are largely found - they seem to have arisen from a strong contact

situation between the two strata represented by set I pronouns and the features associated with it (see 2.3.2.2. in this volume), and by set II pronouns and typological characteristics connected with it respectively. Of these, the set II stratum is much older than the set I stratum. Such contact situation areas may have been located both in the "neck" portion of Irian Jaya, south-east of the Vogelkop Peninsula where the two language migrations seem to have crossed, and in the central and central southern parts of the mainland.

From this central region, the element characterised by set I pronouns seems to have spread to the east to a moderate degree, into the highlands of what constitutes Papua New Guinea today, and to a much stronger extent to the south-east, perhaps as far as the Trans-Fly and - in addition to advancing also in other directions (see below) - along an easterly route inland from the Papuan Gulf and then turning north, into the Markham Valley and Finisterre Range-Huon Peninsula area. Archaic fused forms are found in that region too. From there, it appears to have entered the highlands and moved westwards in them for some distance, and also to have penetrated into the south-eastern tail-end of the mainland quite strongly, spreading into New Britain and the islands to the east of it, especially Bougainville, as well to some extent. It appears that the advancing of this language migration which could be regarded as the first Trans-New Guinea Phylum migration, into the south-eastern tail-end of the New Guinea mainland drove out another, earlier language group there which moved on to Rossel Island in the Louisiade Archipelago, east of the tail-end of the mainland, and to the New Britain-New Ireland area, perhaps superimposing itself upon even earlier languages there: New Britain appears to have been originally inhabited by representatives of a Papuan culture according to prehistoric evidence. In this connection Golson (1966b) draws attention to the distribution of the waisted axe which is typical of the Papuan culture tradition as opposed to the Austronesian, and has been found at sites in the highlands and elsewhere on the New Guinea mainland. Specimens have also been found in New Britain and in the north-western Solomons; but while in New Guinea and New Britain both polished and unpolished specimens are accounted for, only polished ones have been met with in the Solomon Islands.

Golson notices a certain agreement between the distribution of this axe type and that of Papuan languages, and suggests that the polished version of the waisted axe constitutes a technological reflection of contact with, presumably Austronesian-speaking, newcomers. At the same time, he points out that the sole presence of the polished versions in Oceania proper, as well as that of Papuan languages as far to the east as the Reef and Santa Cruz Islands, may have resulted from the Austronesian newcomers imparting skills and stimulus for ocean voyaging to the

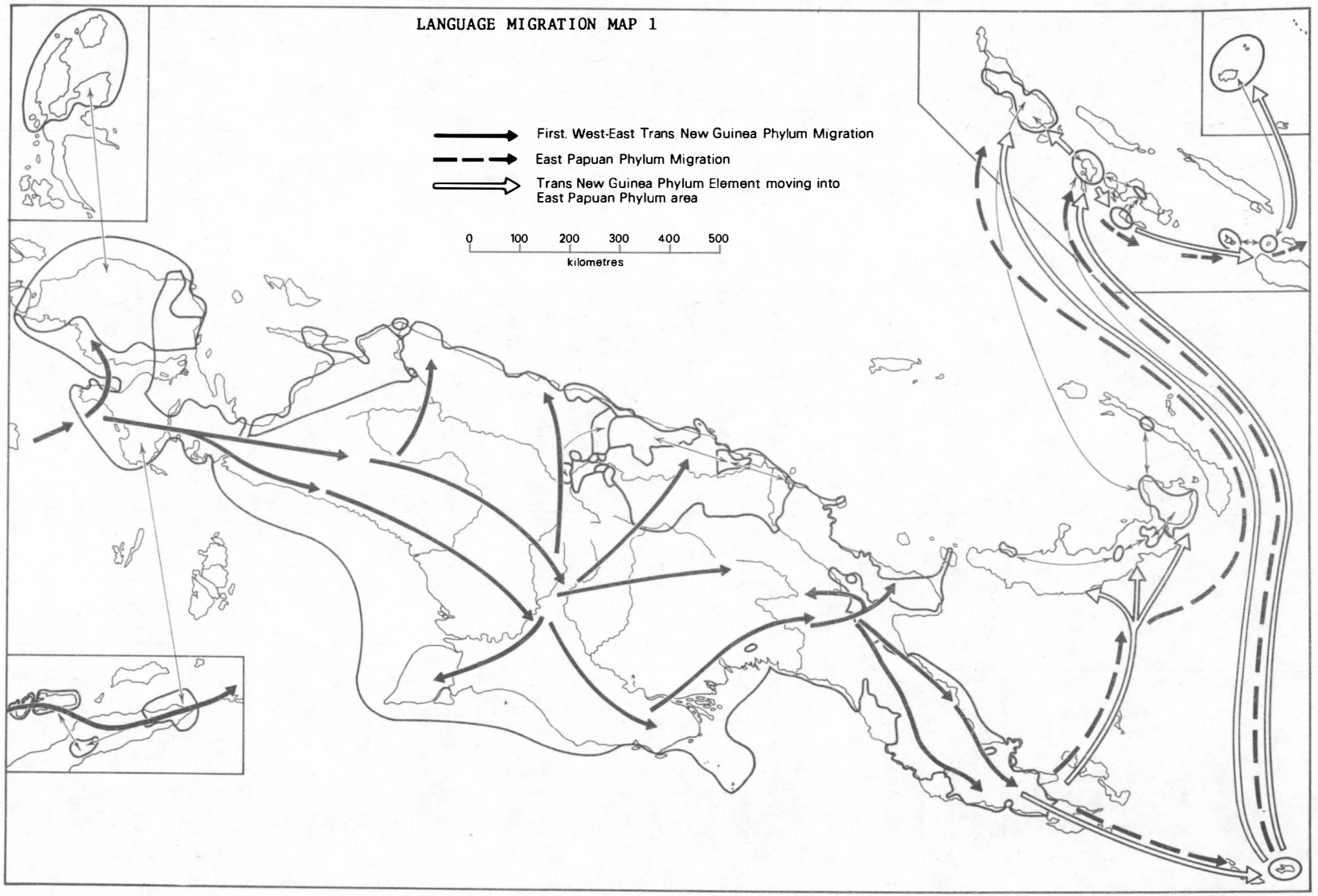
Papuans of south-eastern New Guinea and the Bismarck Archipelago. From Rossel Island the displaced language group which seems to have left behind recognisable lexical and phonological substratum in the south-eastern tail-end of the mainland, seems to have later spread to the Bougainville and Vella Lavella Islands in the Solomon Islands chain - probably as a result of Austronesian cultural influence (Golson 1966b) - and apparently largely from the latter to the New Georgia, Rendova, Russell and Savo Islands in the Solomons, and eventually into the Reef and Santa Cruz Islands far to the east. In consequence, all the Papuan languages located in the eastern island world are interrelated and form the East Papuan Phylum (see 2.13.1. in this volume) which is a distinct phylum though it shows quite noticeable traces of varying strength, of the influence of the displacing early Trans-New Guinea Phylum languages. Influence from the latter seems to be particularly strongly in evidence in the languages of the East Bougainville Stock of the East Papuan Phylum.

From the central region near the present Irian Jaya-Papua New Guinea border mentioned before, the Trans-New Guinea Phylum language element under discussion appears to have spread also to the south-west, and also to the north where it is typologically and lexically strongly in evidence in the Lake Sentani area near the north-eastern coast of Irian Jaya, though the pronouns appearing there belong to sets II and III obviously as a result of the postulated set II and set III east-west migrations in the north of the New Guinea mainland which are mentioned below.

Voorhoeve (1969) found clear evidence in support of his assumption of a closer connection between Sentani on the north-eastern and Asmat on the central southern coast of Irian Jaya, with the nature of the evidence indicating that the ancestral forms or form of both languages had been spoken in a low-lying swampy area. It seems possible to suggest that the migration referred to above may have separated the ancestral forms of Sentani and Asmat, with their ancestral area lying centrally in the present day Irian Jaya-Papua New Guinea border area or further east, perhaps in the Upper Sepik (or Ramu) basins, or in the Upper Fly and more westerly regions, with the latter perhaps more likely when considering the much stronger presence of an old Trans-New Guinea Phylum type of language in the south than in the north.

It also seems that the language migration under discussion may have moved to some extent to the north-east into the Sepik-Ramu area.

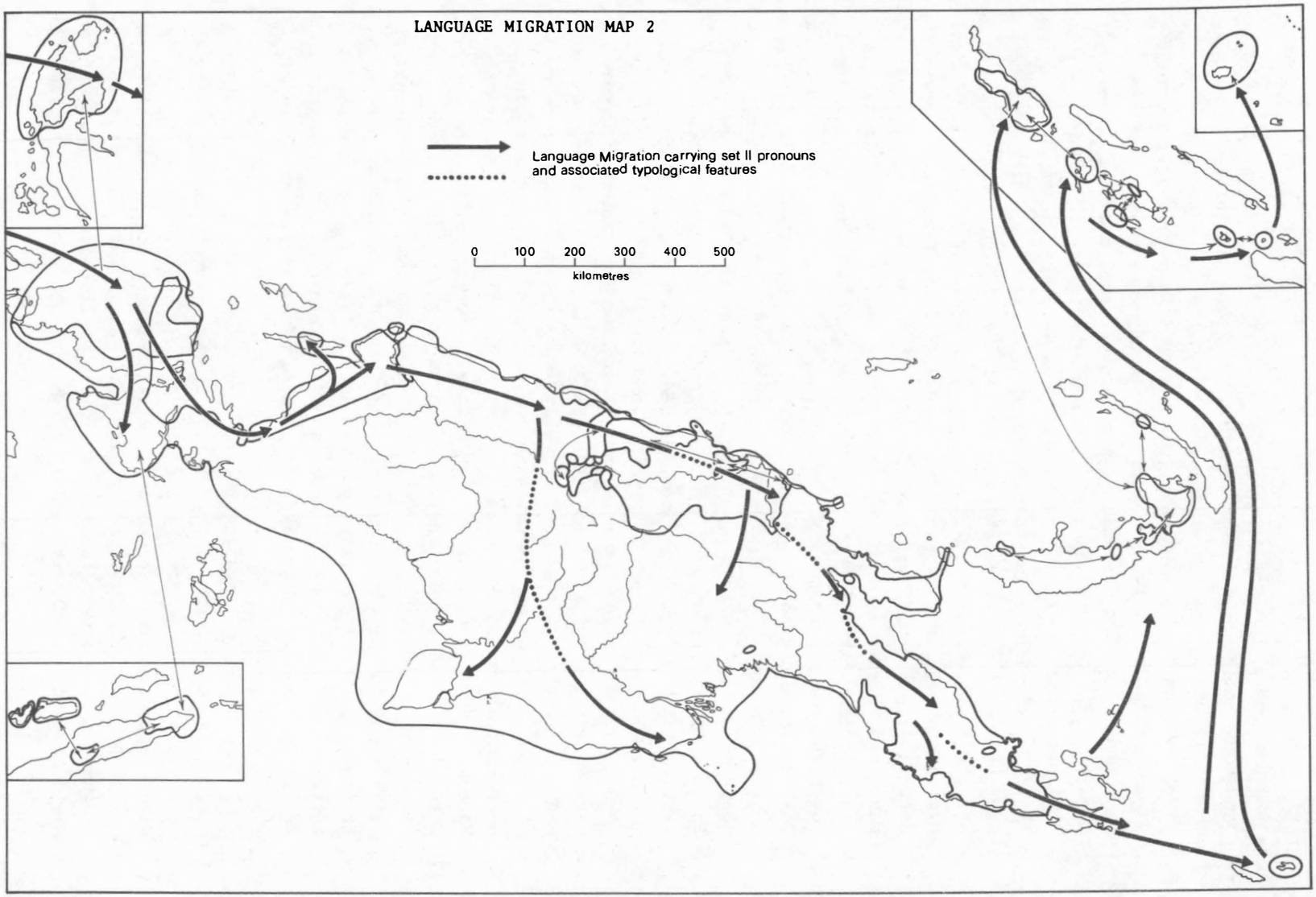
As has been mentioned above, it is assumed that a language type characterised by the presence of pronoun forms of sets II and III, along with typological characteristics usually associated with set II, reached the New Guinea area via northern Halmahera and the northern main part of the Vogelkop Peninsula from where the language type containing set II


LANGUAGE MIGRATION MAP 1
First. West-East Trans New Guinea Phylum Migration
East Papuan Phylum Migration
Trans New Guinea Phylum Element moving into East Papuan Phylum area
0 100 200 300 400 500
kilometres

pronouns and associated typological features seems to have spread somewhat into the Bomberai Peninsula, but much more vigorously across the Geelvink Bay area eastwards into and through what is today northern Irian Jaya and on through the Sepik region to the Ramu area in which it manifests itself today mostly only through the presence of set II pronouns. From the central northern near-coastal and inland areas, the language type appears to have moved southwards as well to what is today the south-east of Irian Jaya and the Trans-Fly area of Papua New Guinea. Most of the evidence for this language type has been blotted out in the area between the north-eastern slopes of the highlands in Irian Jaya and the southern coastal regions, ostensibly by different later language migrations such as the second east-to-west, Trans-New Guinea Phylum migration, but it is very strongly in evidence in the southern area mentioned above. From the Ramu area, this language type, manifested today largely through the set II pronouns only, appears to have moved south and east through some parts of what is today the highlands of Papua New Guinea, and into the south-eastern tail-end of the mainland. From there, it seems to have spread out into the islands where both the set II pronouns and the typological features associated with it reappear in East Papuan Phylum languages. In the intervening areas most of its typological and structural features seem to have been blotted out by the subsequent Trans-New Guinea Phylum migrations.

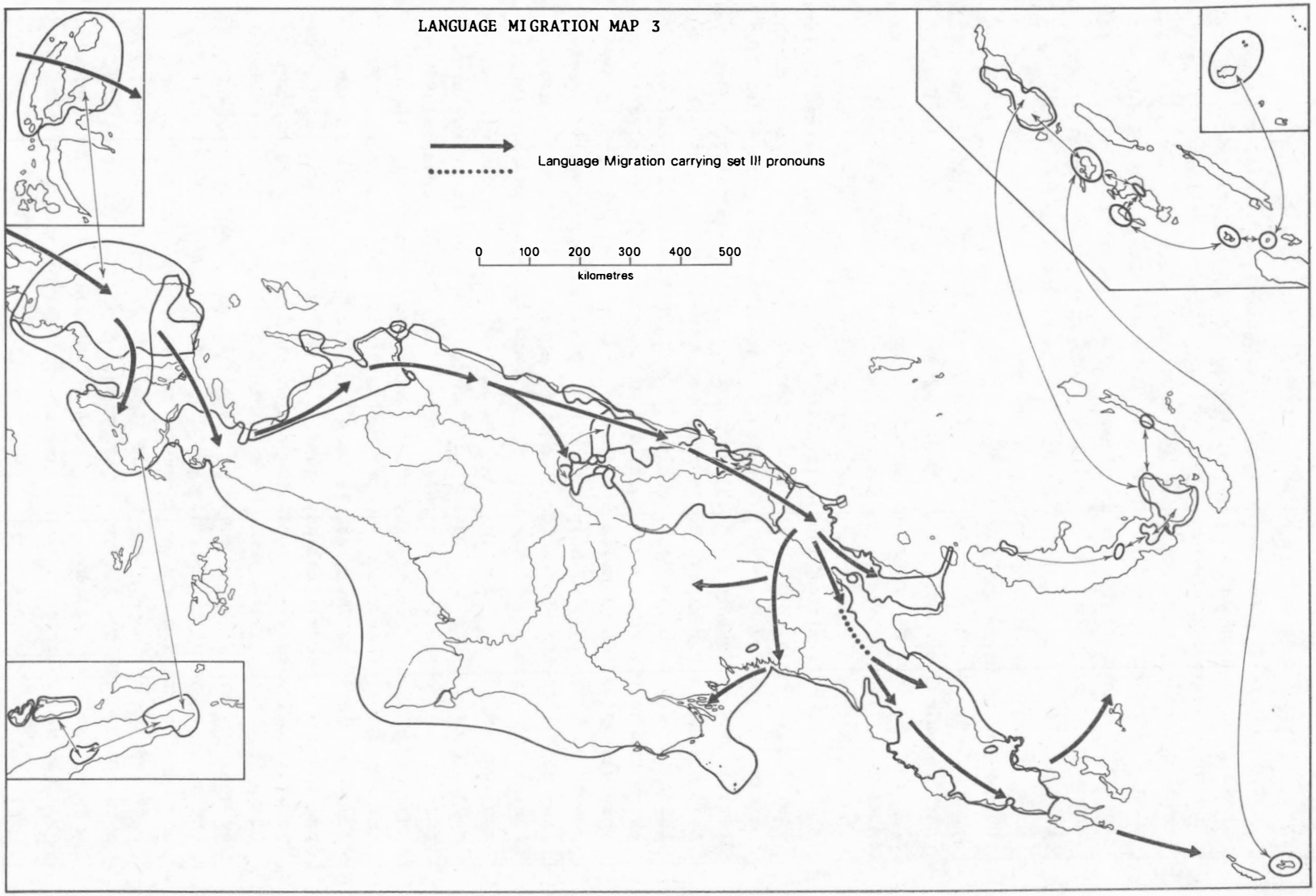
The language migration carrying the pronoun forms of set III appears to have moved from the Vogelkop Peninsula area into the Bomberai Peninsula and the "neck" portion of Irian Jaya to some extent, but much more strongly eastwards across Geelvink Bay and along the northern coastal, near-coastal and inland areas all the way across to the present-day Madang District area of Papua New Guinea. From there it seems to have moved southwards through the central part of the highlands area into the Papuan Gulf region, and to a limited extent into the south-eastern tail-end of the mainland and on to the islands. In much of northern Irian Jaya, the Madang District area and the mainland areas mentioned after it, the languages are members of the Trans-New Guinea Phylum and as such, generally of the type associated with the pronoun forms of set I.

Of the two main language migrations mentioned above in connection with the pronoun forms of sets I and II, the one referred to in the second place may, as has already been pointed out, be assumed to have taken place earlier, because typological features and pronominal forms associated with it are found in many cases as substratum features in language groups attributable to the first mentioned, i.e. the Trans-New Guinea Phylum, migration. Also, the pronoun forms and typological


LANGUAGE MIGRATION MAP 2
Language Migration carrying set II pronouns
and associated typological features
0 100 200 300 400 500
kilometres

features connected with the second migration mentioned appear in language groups which can be regarded as archaic for a variety of reasons. The third migration connected with the set III pronoun forms may have been appreciably later than the set II migration, but probably coinciding in time with the first Trans-New Guinea Phylum, i.e. set I migration seeing that the set III pronoun forms appear to be derived from set II and set I forms (see 2.3.3.4.4. in this volume). This migration may well have had its origin in the disturbances caused in the far western part of the New Guinea mainland by the impact of the first Trans-New Guinea Phylum migration there and typological and structural features associated with the eastward spreading of the set III pronouns may well have contained some of the Trans-New Guinea Phylum characteristics.

After the assumed migratory movements outlined above, a very major disturbing factor appears to have affected the linguistic picture of the New Guinea mainland as from approximately 5,000 or so years ago in the form of an Austronesian immigration centering on the Markham Valley. That area seems at that time to have been occupied by late forms of the original Trans-New Guinea Phylum languages which were characterised by certain sets of subject and object person markers with verbs, and certain typological features. These languages appear to have started migrating quite extensively at some time after the first Austronesian contact which had been long enough to allow them to adopt a number of basic vocabulary Austronesian loanwords - some of them, as has already been mentioned in 3.2.3., of Eastern Oceanic type. These migrations went essentially in three directions: north and north-west into the Huon Peninsula, Finisterre Range and the present-day Madang District areas, and south-west into what is today the Eastern Highlands District as far as the Chimbu District border, and into the Angan (or Kukukuku) area further east where the originally probably unrelated languages of the Angan people were replaced by a late Trans-New Guinea Phylum language which however shows strong substratum features. This subsequently developed into the Angan stock-level Family. The migration into the present-day Eastern Highlands District area may have given rise to some population pressure westwards and contributed to a westward expansion of the highlands languages into areas formerly unoccupied, or occupied by speakers of languages entering there from the first Trans-New Guinea Phylum language migration, perhaps displacing such languages to the south. The third migration direction was due west and seems to have followed the northern slope of the highlands ranges to the central hub area of New Guinea. All along these routes, and further west, the typological features mentioned, and Austronesian loanwords, are present. From the central hub area, the language migration appears to have


LANGUAGE MIGRATION MAP 3
Language Migration carrying set III pronouns
0 100 200 300 400 500
kilometres

continued in several directions: in the first place, north and north-west into the present-day border area between Irian Jaya and Papua New Guinea and the regions to the west of it, where the Trans-New Guinea Phylum languages apparently superimposed themselves upon unrelated languages brought in earlier by the Sepik-Ramu Phylum migration (see below) and upon languages of other groups, having such a strong influence upon them in terms of lexical, pronominal and typological features, that the languages affected are now classifiable as, albeit secondary, members of the Trans-New Guinea Phylum. However, the influence of this particular migration is very weak in the Sentani Lake area in north-eastern Irian Jaya. The language migration also seems to have moved to the south, south-west and south-east, down the Digul, Fly and Strickland Rivers where its influence is strongly in evidence in the Awyu, East Strickland, Bosavi and Ok Families of the Central and South New Guinea Stock, and also in the Marind Stock. Its influence is still noticeable along the Lower Fly, and peters out in the Fly Delta area and the Trans-Fly. On the south-western side, its influence fades out west of the Eilanden River in the Kamoro-Sempan-Asmat Family of the Central and South New Guinea Stock. In view of the weakness of the influence of this second, later, Trans-New Guinea Phylum migration in both the Asmat and Sentani language areas, it seems unlikely that the similarities between these two languages as observed by Voorhoeve (1969) (see above) may be attributable to this relatively late influence which is common to both.

An interesting probable language migration affecting the central part of the New Guinea mainland on the Papua New Guinea side is suggested by the presence of quite pronounced lexical links between languages of the East Strickland Family and,less so, some other language families of the same area, with languages of the phylum-level Left May Family (see 2.14.1.3. in this volume) in the Sepik Districts. No relationship between the languages constituting that family, and any other Papuan languages has yet been ascertained. At the same time, the Left May Family languages show characteristics which are strikingly reminiscent of those attributed to a substratum in several of the language groups in the interior of the Gulf, Western, Southern Highlands and adjacent parts of the Eastern Highlands and Chimbu Districts, and which manifest themselves in an abundance of nasal vowels, partial or complete absence of bound subject markers with verbs, simplicity or absence of medial verb forms and a proliferation of aspectual markers (see 2.3.2.3. in this volume). When taking corroborating interdisciplinary evidence into account, it seems possible to suggest that the presence of this substratum in the southern areas mentioned may be attributable to a southward migration of speakers of Left May Family languages into them. They subsequently

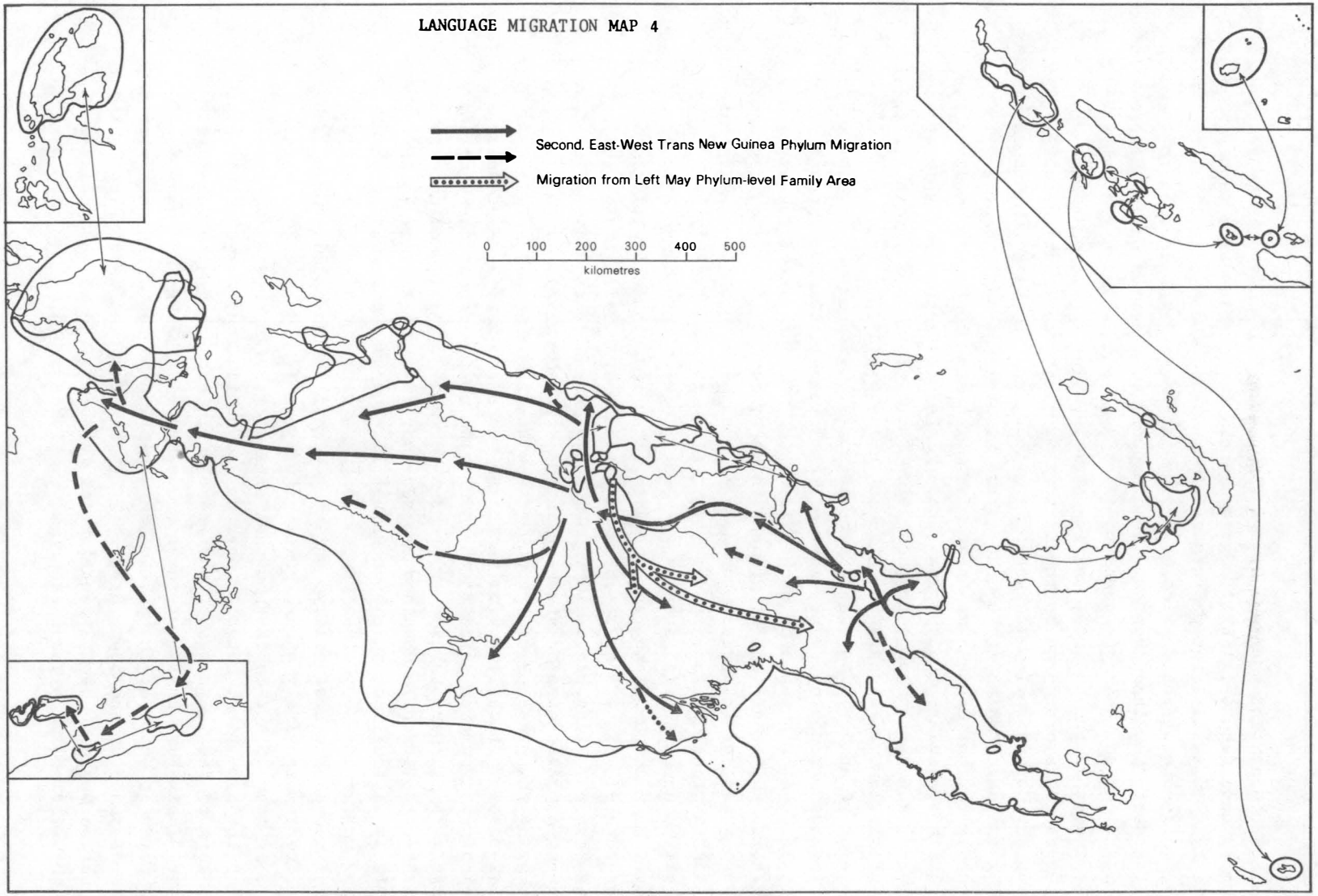
adopted the Trans-New Guinea Phylum language(s) of the area, preserving some of their Left May Family vocabulary and some of the structural and typological features of their original language(s) in the process.

Returning to the second Trans-New Guinea Phylum migration discussed above, it seems that the main direction of the continuation of that language migration from the "hub" area went in a westerly direction into the highlands areas of West New Guinea and across them to the "neck" portion of the mainland, and from there into the north-western extremity of the Bomberai Peninsula.

The Bomberai Peninsula as well as the Southern Vogelkop Peninsula area had apparently been within the borders of the Trans-New Guinea Phylum area from the beginning of the first, west-to-east, Trans-New Guinea Phylum migration. Both language areas, especially the southern Vogelkop, show marked influence from the adjacent West Papuan Phylum languages and appear to have encroached upon languages of that type.

The situation regarding the languages of the Timor-Alor-Pantar area remains somewhat unclear. They show strong links with the Bomberai Peninsula languages, and also display strong West Papuan Phylum substratum features. It seems possible that their Trans-New Guinea Phylum nature is attributable to the first Trans-New Guinea Phylum migration which encroached upon a West Papuan Phylum type language originally occupying the area. However, it is known that frequent contacts used to take place between people of the Bomberai Peninsula and the Timor-Alor-Pantar area, and significantly, the closest linguistic connections of the Timor-Alor-Pantar languages are with the Bomberai Peninsula languages: in fact, Timor-Alor-Pantar area languages which are geographically closest to the Bomberai Peninsula - such as Oirata and Kisar Island (see 2.10.1., Editors' Note 3) - show somewhat closer connections with Bomberai Peninsula languages in some respects (e.g. membership of pronouns to certain sets) than do Timor-Alor-Pantar languages located further away. It may be possible that the Trans-New Guinea Phylum nature of the Timor-Alor-Pantar area languages is more predominantly attributable to these later contacts, than to the first Trans-New Guinea Phylum migration, but very probably both these factors have played a part.

Quite independently of the Trans-New Guinea Phylum language immigration into the New Guinea area, and probably preceding it by a comparatively short span of time, another language immigration carrying the ancestral forms of the Sepik-Ramu Phylum languages appears to have entered the New Guinea mainland on the north coast approximately in the present-day Irian Jaya-Papua New Guinea border area, and penetrated south, and then to the east and north-east as far as the country between


LANGUAGE MIGRATION MAP 4
Second. East-West Trans New Guinea Phylum Migration
Migration from Left May Phylum-level Family Area
0 100 200 300 400 500
kilometres

the Lower Sepik and the Ramu Rivers (Laycock 1973). These languages seem to have been originally of a comparatively simple basic type, and this type is still largely preserved in the east where only little, if any, influence of the Torricelli Phylum languages is noticeable in them. In the west, the languages have been exposed to a series of influences from various sources: the unrelated languages and language groups probably ancestral to the area, the Torricelli Phylum languages which appeared to have pressed southward at some time, the first and the second Trans-New Guinea Phylum language migrations, and in the north, the Sko Stock languages which may be the latest to have reached the area. In consequence, the Sepik-Ramu Phylum languages show considerable diversity in their vocabulary and typology, though they are recognisably interrelated, and the language fragmentation there, in relation to the size of the region, is amongst the highest in the New Guinea area, just as the average number of speakers per language is amongst the lowest.

The assumed southward movement of the Torricelli Phylum languages may perhaps be attributable to the influence of the postulated language migration which carried the pronoun forms of set III (see above) along the northern coastal areas - or more probably the foothill area because of the physical difficulties of moving along the coastal plains - to the present Madang District area and beyond. This is corroborated by the fact that a unique blood type characteristic (Gerbich A negative) (Laycock 1973:57) of the speakers of present-day Torricelli Phylum languages and of people of surrounding areas is also encountered amongst present-day Austronesian speakers in the Markham Valley, obviously betraying the presence of a group of now Austronesianised original speakers of Torricelli Phylum languages there who may, perhaps under pressure, have moved ahead of the migration of the people carrying the language type characterised by pronoun forms of set III, and upon reaching the Ramu, followed it down and crossed over into the Markham Valley.

If it is true that this pronoun set III language migration was carrying some Trans-New Guinea Phylum language elements as has been indicated above as a possibility, this may constitute an added explanation for the comparatively strong presence of Trans-New Guinea Phylum influence in much of the Sepik-Ramu and Torricelli Phyla areas.

At the same time, Laycock (personal communication) suggests that the speakers of the languages of the Lower Sepik (or Nor-Pondo) Sub-Phylum in the Sepik-Ramu Phylum may have proceeded east along the coast from the point of entry of the phylum languages in the west, and then migrated some distance up the Sepik River. If this assumption is correct, this migration may have been a contributing factor to the southward movement of the Torricelli Phylum speakers as mentioned above.

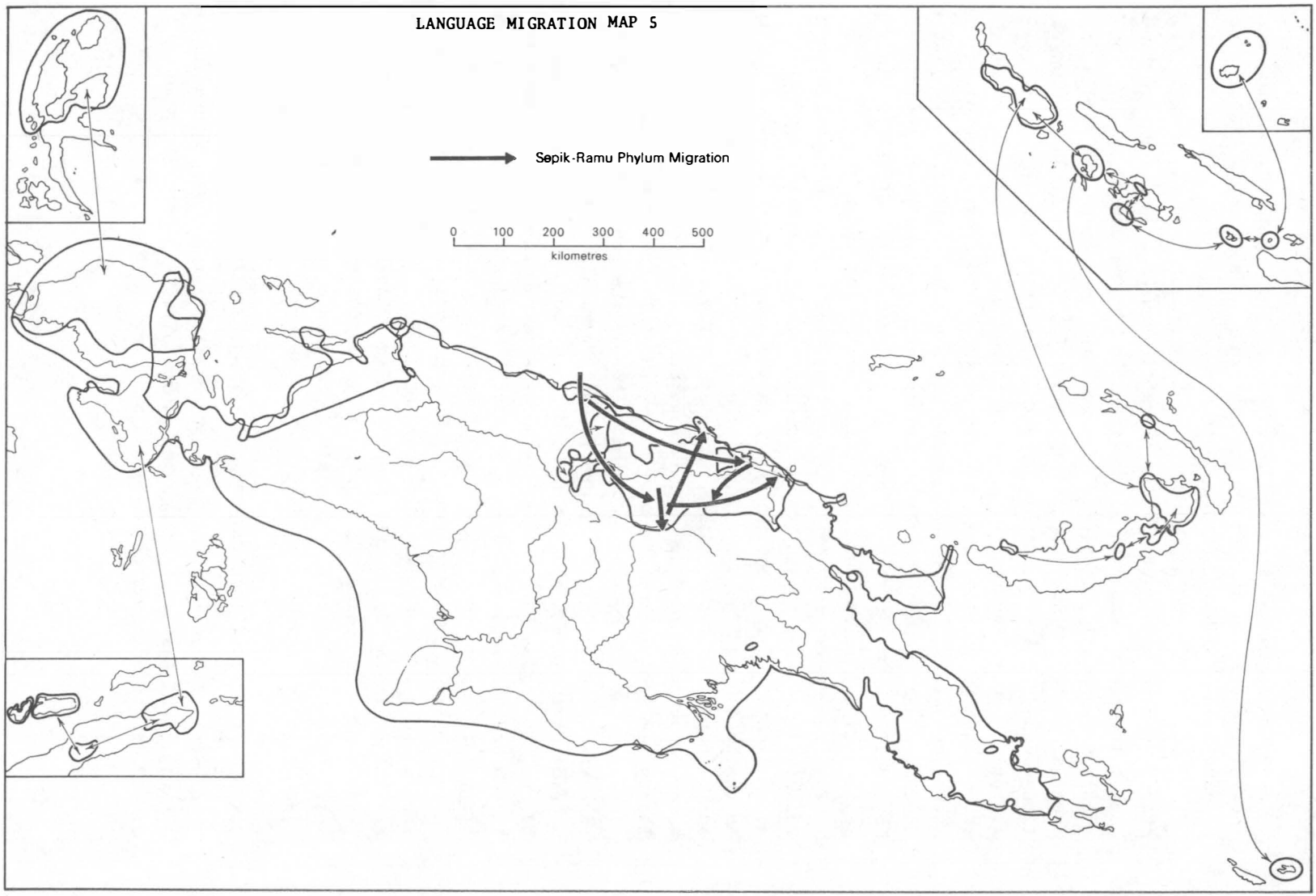
A central group of speakers of ancestral Sepik-Ramu Phylum languages seems to have moved south into the highlands area, perhaps yielding to pressures of over-population or excessive forest-clearing to the north of the Sepik. In the highlands area, they appear to have, at a later stage, come into contact with speakers of Trans-New Guinea Phylum languages and their languages were quite strongly influenced by this contact. Subsequently, they seem to have moved north into the Middle Sepik area and on to the north coast, splitting the Torricelli Phylum languages into two sections through absorbing the connecting part which now constitutes a substratum in the Sepik languages in the north. A small third group of Torricelli Phylum languages is found further east on the northern coast of the present-day Madang District - perhaps more likely an old refugee group than the result of another break in the original Torricelli Phylum area as a result of the eastern end of the original Sepik-Ramu Phylum language migration reaching the coast.

The present-day Torricelli Phylum languages are quite numerous, but relatively similar to each other which appears to militate against the assumption of their great antiquity in the area which has been suggested at the beginning of 3.4.1. To explain this problem it may well be assumed that most of the original Torricelli Phylum-type languages were absorbed by other languages, and disappeared as a result of the various language migrations referred to above, and only one or several very closely related languages survived to become the comparatively recent ancestral language(s) of the present-day Torricelli Phylum languages.

Amongst the small groups in the Western Sepik District, the languages of the Sko Phylum-level Stock may perhaps be relatively late arrivals in the New Guinea area. They are coastal languages with a tonal morphology which is unique in the New Guinea area, though they also show quite strong Trans-New Guinea Phylum pronominal and lexical influence. The speakers of these languages use tacking sailing canoes which again are unique in the New Guinea area, with their nearest occurrences in present-day Indonesia. This language group deserves careful comparison westwards as it seems not impossible that its origin or at least an element in it, may be traceable far to the west.

3.4.2. *MIGRATIONS INVOLVING PAPUAN AND AUSTRALIAN LANGUAGES*

A detailed discussion of language contacts between New Guinea area languages and Australian languages (Wurm 1972b) has been given in 2.16.2. in this volume and need not be repeated here.


LANGUAGE MIGRATION MAP 5
Sepik-Ramu Phylum Migration
0 100 200 300 400 500
kilometres

3.4.3. *AUSTRONESIAN MIGRATIONS IN THE NEW GUINEA AREA*

The first Austronesians to reach the New Guinea area about 5,000 years ago or so are believed to have settled in the New Britain area and in north-eastern New Guinea (Grace 1964). It may seem plausible to suggest that they reached the New Britain and New Ireland areas first, because they may certainly be assumed to have come from the west, and during the north-westerly winds season it is very difficult for small sailing craft to land on the north coast of New Guinea because of the extremely rough conditions. At the same time, any vessels following the north coast westwards sailing before the north-westerly winds are certain not to miss the New Britain-New Ireland island curve. In the south-easterly winds season, landing on the north coast of New Guinea is easy, and it may well be suggested that as far as the present Papua New Guinea area is concerned, the ancestors of the north coast Austronesians came from New Britain where they made their first landfall. It may be mentioned that there is a marked linguistic break between the Austronesian languages spoken west and east of Manam Island in the Madang District: this may bear out to some extent what has been said above and suggests that the two types of Austronesian languages involved owe their presence in their current areas to different migrations. The Austronesian languages of the area east of Manam Island may not all have come from the New Britain area in the first place. Those of south-western New Britain and those of the central south coast of the mainland may well prove to be members of Eastern Oceanic (Pawley 1969a, 1972) and may have reached those areas as a result of a retrograde migration from the east (Pawley 1969b). The same may be true of other Austronesian languages spoken on the south coast to the east of its central part. The postulated Austronesian migration into the Markham Valley which is believed to have given an impetus to the second, east-to-west, migration of the Papuan Trans-New Guinea Phylum languages about 5,000 or so years ago (see 3.4.1.) is likely to have been one of Eastern Oceanic speakers, because the Austronesian loanwords found in the Trans-New Guinea Phylum languages involved are Eastern Oceanic lexical items.

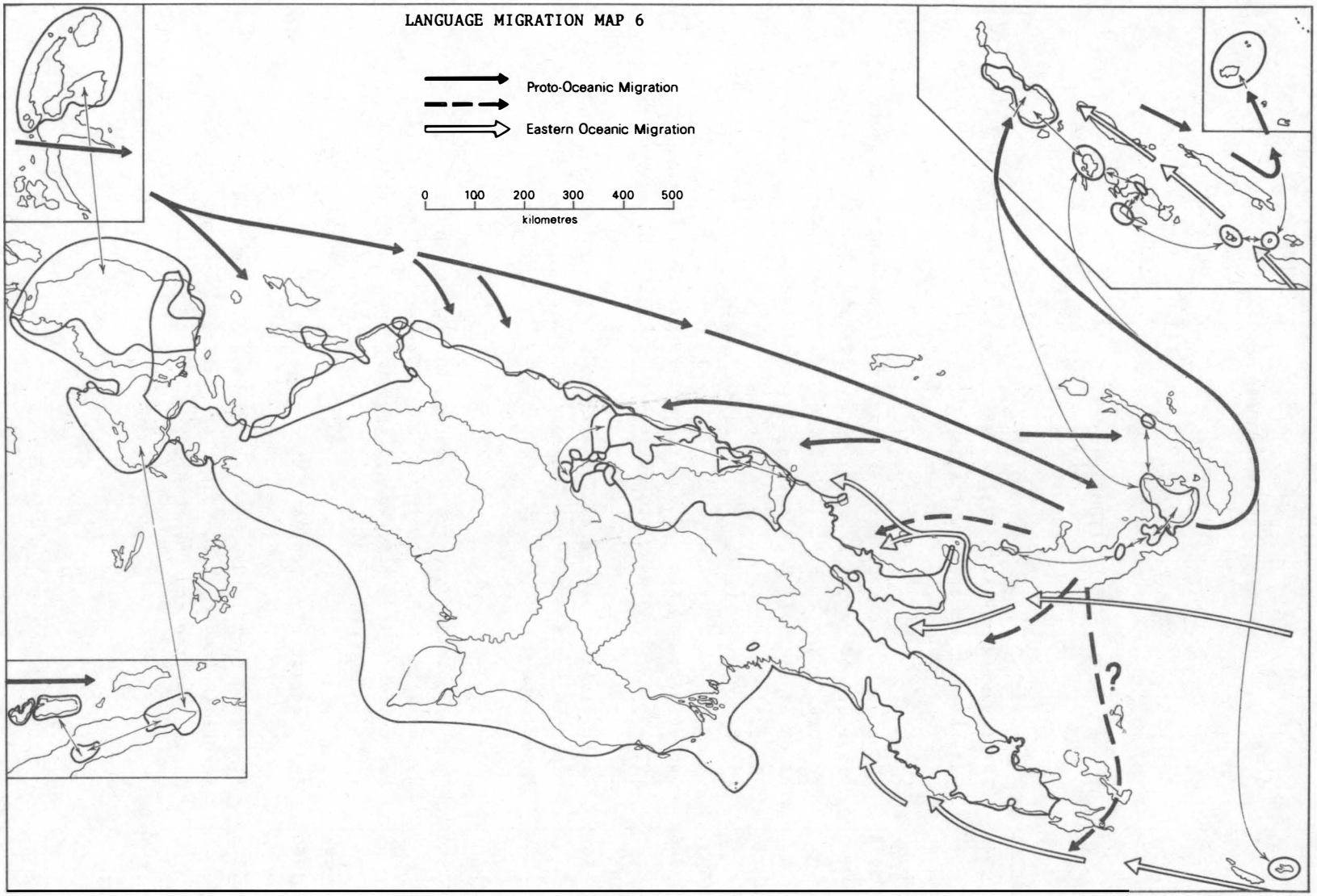
Capell (1943) suggested three separate strata of Austronesian words in south-eastern Papua which he attributed to separate migrations from different parts of present-day Indonesia.

The status of the Austronesian languages in Irian Jaya is different, and it may well be that they are languages whose ancestors came directly from the west. Milke (1958) suggested that there had been an extended period of contact between speakers of proto-Eastern Oceanic and speakers of earlier stages of Philippine, Celebes and eastern Indonesian languages,

and also assumed that the languages ancestral to present-day New Guinea Austronesian languages remained in contact with languages ancestral to present-day eastern Indonesian languages.

It has also been assumed that a part of the immigrant Austronesians continued moving on to the east immediately, without getting into close contact with the New Guinea area, and apparently proceeded directly to the central New Hebrides which became the focal point for a subsequent Austronesian expansion through Island Melanesia and beyond. By about 2,000 B.C. and later, the Austronesians appear to have expanded through much of the New Hebrides, predominantly in a northerly direction, reached the south-eastern Solomon Islands and advanced westwards in the Solomon Island chain, and settled in western New Britain and on parts of the south coast of Papua New Guinea (Pawley 1969b, Wurm 1976).

No specific mention is made by this particular theory of the Austronesian languages in other parts of the New Guinea area. However, as has been pointed out above, it seems likely that some of the Austronesian language elements found in the northern coastal areas east of Manam Island in the Madang District are also of Eastern Oceanic origin. At the same time, many of these languages are believed to have been subject to strong Papuan influence (see (II) 4.5.1. and (II) 4.5.2.) and this makes the determination of their exact place of origin rather difficult. Much further work is needed before the problems of the apparently multiple migrations of Austronesian languages in the New Guinea area can be solved to satisfaction (see also 1.2.2. in this volume).


LANGUAGE MIGRATION MAP 6
Proto-Oceanic Migration
Eastern Oceanic Migration
0 100 200 300 400 500
kilometres
?

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BIOGRAPHICAL NOTES

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BIOGRAPHICAL NOTES ON THE CONTRIBUTORS TO THIS VOLUME

ARTHUR CAPELL was educated at North Sydney Boys' High School and took his first degree at Sydney University in 1922 and his M.A. in 1931. He had meanwhile taken up the study of Oceanic linguistics and received his Ph.D. in this subject in London in 1938. He then began fieldwork in Australia and in 1944 took up a position in the Department of Anthropology at the University of Sydney. He has carried out extensive fieldwork in Australia, New Guinea, the British Solomon Islands, the New Hebrides, and was the only non-American member of the Coordinated Investigation of Micronesian Anthropology expedition, working in Palau in 1947. He became the first Reader in Oceanic Linguistics at the University of Sydney in 1949. He retired from the University of Sydney in 1967 and worked as Visiting Fellow at the Australian National University in 1967 and is now working privately in writing up the results of his research and fieldwork. He has produced a number of books and articles on various aspects of Pacific and general linguistics.

THOMAS E. DUTTON was born and educated in southern Queensland and spent the early years of his professional life teaching in that State and in Papua New Guinea before returning to complete a Certificate in Education and degrees in linguistics at the University of Queensland, in the late sixties, and obtaining his Ph.D. in linguistics at the Australian National University in 1969. He has held appointments in the Department of Linguistics in the School of Pacific Studies of the Australian National University, and is at present Professor of Language at the University of Papua New Guinea, Port Moresby. He is particularly interested in Papuan and Austronesian languages of Central and South-East Papua as well as in Pidgins and Creoles. He has published widely in his subject including extensive language-learning courses in Tok Pisin and Hiri Motu, the two major lingue franche in Papua New Guinea.

KARL JAMES FRANKLIN was born near Schickshinny, Pennsylvania and grew up on a farm in the area. He received the B.A. in Psychology from the King's College, Briarcliff Manor, New York in 1954. He and his wife Joice attended the Summer Institute of Linguistics at the University of Oklahoma during the summers of 1956, 1957 and 1963. They have also taught at the same Summer Institute of Linguistics, as well as in Australia and New Zealand where he has served as principal. In 1958 they began work among the East Kewa in the Southern Highlands of Papua and continued there until the end of 1962. In 1965 he was awarded the M.A. in Linguistics from Cornell University and in 1969 the Ph.D. in Linguistics from the Australian National University. His dissertation was based on West Kewa. He held a Visiting Fellowship in the Australian National University in 1971. He has written a large number of linguistic and anthropological articles on the Kewa. At present he is Director of the Papua New Guinea Branch of the Summer Institute of Linguistics.

HARLAND KERR was born in Kobe, Japan and received all his primary, secondary, and undergraduate tertiary training in New South Wales, Australia. He received the B.Sc.Agr. and Ph.D. degrees in Plant Genetics and Pathology and the Diploma in Anthropology from the University of Sydney, and the M.A. degree in Linguistics from the University of Hawaii while with the East-West Center. He and his wife have been members of the Summer Institute of Linguistics since 1954, working first in the Philippines, 1954-6, in the Cotabato Manobo language group, and later, 1958-71, in Papua New Guinea in the Wiru language area. They have been associated with the annual Summer School of the Summer Institute of Linguistics in Australia since its inception, and he served as principal of the School, except for furlough periods, from 1955 to 1969.

DONALD C. LAYCOCK is an Australian scholar who came to the study of Australian and Oceanic languages after an initial interest, and degree, in English and Germanic philology. After a year spent as a research assistant in Australian Aboriginal languages at the University of Adelaide, he joined the Australian National University for postgraduate work, and obtained his doctorate there for a description of a family of Papuan languages in New Guinea. Following an academic year of lecturing in linguistics and anthropology in the United States, at Indiana and Northwestern Universities, he returned to a permanent staff position in the Department of Linguistics in the School of Pacific Studies of the Australian National University in 1964. In 1969 he was

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KENNETH A. McELHANON received a B.A. with majors in Anthropology and Greek from Wheaton College, Wheaton, Illinois in 1961. Since 1964 he and his wife have been collecting information and data on the languages of the Huon Peninsula, Papua New Guinea under the auspices of the Summer Institute of Linguistics. In 1970 he received a Ph.D. in Linguistics from the Australian National University and this was followed in 1971 by postgraduate study in anthropology under the sponsorship of the Wenner-Gren Foundation. He has taught linguistics at Summer Institute of Linguistics schools in the U.S.A. and in Australia and is now a Research Fellow in the Department of Linguistics in the School of Pacific Studies of the Australian National University. His chief interests lie in Papuan linguistics, the question of their classification, and in lingue franche in Papua New Guinea.

EVELYN M. TODD was born in Ontario, Canada, and completed her basic education there. She received a Ph.D. from the University of North Carolina at Chappel Hill in 1970 and has since then taught in Canada where she is now an Associate Professor at Trent University in Peterborough. Her first field research was on Canadian Indian languages. Since 1972 she has been working on languages in the Solomon Islands and Bismarck Archipelago, with primary interest in the non-Austronesian Papuan-type languages.

CLEMENS L. VOORHOEVE was educated in the Netherlands and got his Ph.D. in Linguistics at the University of Leiden. Before obtaining his doctorate, he spent a lengthy period in the field in the Asmat area of Irian Jaya, and in 1965, joined the Australian National University where he is now Senior Fellow in the Department of Linguistics in the School of Pacific Studies. He carried out extensive fieldwork in western and southern parts of Papua New Guinea and in Irian Jaya and has been instrumental in the establishment of very large groupings of Papuan languages. He has published widely in this subject.

STEPHEN A. WURM obtained his doctorate in Linguistics and Anthropology at Vienna University, and after holding university appointments in Altaic and Turkic linguistics at Vienna University and the Central

Asian Research Centre (associated with St. Antony's College, Oxford University), he joined Sydney University in 1954 and the Australian National University in 1957 where he is now Professor of Linguistics in the School of Pacific Studies and in charge of the University's extensive research program in Pacific Linguistics. His research interests have for many years been focussed on Papuan linguistics as well as on Austronesian, Australian and Pidgin linguistics, and he has published widely in these subjects and on interdisciplinary approaches involving them.

JOHN A. Z'GRAGGEN was born in Schattdorf (URI) Switzerland. He was educated at the Missionsgymnasium Marienburg and Stiftsschule Einsiedeln. In 1955 he joined the Society of the Divine Word Missionaries (SVD) and in 1961 he completed his philosophical and theological studies and was ordained priest of the Roman Catholic Church. During that period of study he also received a basic introduction into ethnology and linguistics. In 1962 he was awarded an MA degree in Thomistic Philosophy at the Catholic University of America, Washington D.C. From 1963 to 1967 he was engaged in missionary work and linguistic research in the highlands and coastal areas of New Guinea. In 1969 he completed his doctoral studies in linguistics at the Australian National University, paying special attention to the classification and typology of the Madang District languages. In 1970 he became a member of the Anthropos Institute with its headquarters in St. Augustin, Western Germany. He resumed his fieldwork in 1971 with a view to obtaining an overall view of the languages of the Madang District and has published some of his findings. Other publications are in press. He is planning to undertake further studies in the mythology, legends and traditional beliefs of the peoples on the North-East Coast of New Guinea.

INDEXES

INDEX OF LANGUAGE NAMES

In this index, the names of languages and language groups appearing in the text of this volume have been included. Repeated occurrences of the same name on a given page have been referred to only once by a single quotation of the respective page number. Cross-referencing between alternative names mentioned in the book has been extensively resorted to. In many cases, this simply takes the form of the alternative name (or names) appearing in parentheses after the name constituting the first part of an entry, with this bracketed name figuring as the main entry in its alphabetically correct place and the unbracketed name of the first entry accompanying it in parentheses, e.g. **Chimbu Proper (Kuman)** and **Kuman (Chimbu Proper)**. If one of the names given in parentheses is obsolete, the word "formerly" has been placed before it, and in the entry constituting its counterpart, "now" appears before the currently used name which is in parentheses. Other explanatory words such as "or", "also", "i.e." have been used occasionally. No cross-referencing has been introduced if two alternative names are alphabetically very close, e.g. for **Bunak (Buna?)**, no counterpart entry **Buna? (Bunak)** has been given. To direct the reader, name entries without page numbers, but "see" plus another name (or names) after it, have been included in a number of instances.

Readers looking for a particular language or dialect name are advised to consult both this index and the Index of Other Names because tribal, village, river etc. and dialect or language names frequently coincide. In some instances, such names figure in both lists.

To reduce the size of the indexes, complementary entries have been compressed into single entries. For instance, the three potential entries **Wiru, Wiru Family, Wiru Family-Level Isolate** have been compressed into **Wiru (Language, Family, Family-Level Isolate)**. If the name can, amongst other entities, refer to a language, "Language" will always be

the first of the bracketed designations, with the others following in alphabetical order. If such an entry has alternative names included in it, the entry will take for instance the following form: **Yelmek-Maklew (or Bulaka River) (Language, Group, Stock, Stock-Level Family, Sub-Phylum-Level Family)**. However, if there is a significant formal difference between two entries which refer to the same entity, the entries have been kept separate, e.g. **Wissel Lakes - Kemandoga Stock** and **Wisselmere - Kemandoga Stock**.

With some entries, it seemed advisable to add explanations in parentheses for clarity, e.g. **Eastern Family (of Pauwasi Stock)**.

Entries consisting of a name preceded by words such as Eastern, Western etc. have been treated as follows: if these adjuncts constitute a part of a recognized name, the whole entry has been entered alphabetically under the initial of the adjunct word, e.g. **Western Dani** and **Southern Kiwai**, which are recognized language names, are under **W** and **S** respectively. Otherwise, the entry has been alphabetized under the initial of the name itself, e.g. **East Kewa** is under **K**. A comparable example is **Grand Valley Dani** which is a recognized language name and is under **G**, whereas **Lower Grand Valley Dani** is also under **G**, not under **L**. In addition, (Upper) and (Lower) was added to some of the page references in the former entry. Names of proto-languages have all been entered under **P** for "proto".

ng and **ŋ** are found in some language names in free variation. Alphabetically, **ŋ** has been regarded as representing **ng** and has been ordered as such.

References to more than two successive pages have been compressed to the two extreme page numbers connected by a hyphen, e.g. 654-659.

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This index contains geographical names, the names of tribes and groups of people, and other names which do not qualify for inclusion into the other two indexes, such as the names of organisations and institutions. Repeated occurrences of the same name on a given page have been referred to only once by a single quotation of the respective page number. Cross-referencing between alternative names mentioned in the volume has been extensively resorted to and follows principles which are similar to those mentioned above in the introduction to the Index of Language Names.

Readers looking for a particular tribal, village, river, language or dialect name are advised to consult both this index and the Index of Language Names because tribal, village, river, language and dialect names frequently coincide. In some instances, such names figure in both lists.

Names or periodicals, publishers and places at which given books etc. have been published and which figure in the volume, have not been included in this index, but the names of organisations and institutions mentioned in it have been entered.

Compression of complementary entries into single entries features in this index as it does in the Index of Language Names. Only broad indications of category are given. Thus, the notations "Town", "Village" and "Station" refer to a variety of settlements that could also be called "City", "Hamlet", "Administrative Headquarters", and the like. Similarly, the notation "River" subsumes "Valley", and "Mission" includes "Missionaries".

The principles underlying the alphabetical ordering of names which are preceded by adjuncts such as Northern, Southern, Central, etc. are comparable to those followed in the Index of Language Names. With river names, adjuncts such as Upper, Lower, Middle are frequent - in most instances, river names preceded by such adjuncts have been alphabetized under the initial of the name itself.

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